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CAREERS FOR OUR SONS

A PRACTICAL HANDBOOK TO THE
PROFESSIONS AND COMMERCIAL LIFE

EDITED BY THE
REV. GEO. H. WILLIAMS, M.A. (OXON)
RECTOR OF REMENHAM, HENLEY-ON-THAMES, FORMERLY HEADMASTER
OF CARLISLE GRAMMAR SCHOOL

FOURTH EDITION
REVISED THROUGHOUT AND ENLARGED

LONDON
ADAM AND CHARLES BLACK

1914

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Second and Enlarged Edition - - - - 1908
Third Edition - - - - 1911
Fourth Edition published by A. and C. Black in June, 1914*

TO
THE RIGHT REV. H. M. BURGE, D.D.,
LORD BISHOP OF SOUTHWARK,
AND
LATE HEADMASTER OF WINCHESTER COLLEGE,

THIS BOOK IS INSCRIBED WITH THE AUTHOR'S
SINCERE RESPECT.

INTRODUCTORY

THE FIRST Edition of this Book, which was issued in 1904 with a Prefatory Letter by Lord Selby, then Speaker of the House of Commons, met with considerable public favour; a Second Edition was required in 1908, and a Third in 1911. The present edition is issued under new auspices. In 1912 I resigned the Headmastership of Carlisle Grammar School on my appointment to the College living of Remenham, Henley-on-Thames, and, as I had moved near London, I felt it would be well for the book to have the advantage of being connected with a firm of London publishers. Messrs. A. and C. Black, the publishers of "Who's Who," have undertaken this responsibility, and I fully hope that the book in its revised and enlarged form will better deserve the support it has hitherto received.

I would wish to express my obligations to the following gentlemen, who have given me the help of their expert knowledge: A. Easton Thomas, Esq., M.A., Whitehall, S.W.; E. A. Price, Esq., M.A., Royal Naval College, Osborne; Captain Stead, Army Tutor, Southsea; W. A. Fuller, Esq. M.A., Army Tutor, Storrington, Sussex;

INTRODUCTORY

Dr. Abel Evans, Resident Medical Officer, Charing Cross Hospital; F. H. Stafford, Esq., the Secretary of H.M.S. *Worcester*; E. W. Wakefield, Esq., J.P., Director, Lakes Flying Co.; Frederick Dapp, Esq., Clerk to the Council of Legal Education; J. Hodgkinson, Esq., B.Sc., Carlisle Grammar School; S. H. Nicholson, Esq., M.A., Organist of Manchester Cathedral; Kenneth R. Barnes, Esq., M.A., Academy of Dramatic Art; Edgar Goodall, Esq., of the *Times* Advertisement Department; Professor W. Morgan, University of Bristol; and G. R. Kirwan, Esq., Headmaster of South Shields High School. I have also derived occasional assistance from some of the useful "summaries" issued by The Future Career Association, 39, Victoria Street, S.W., and throughout the work of revision, I have been under constant obligation to the skilful co-operation of Mr. Leonard H. Stowell, of Messrs. A. and C. Black, who has largely relieved me of the wearisome toil of verification of details.

G. H. W.

REMENHAM RECTORY,
April, 1914.

PREFACE TO THIRD EDITION

BY THE RIGHT HON. THE LATE EARL OF CARLISLE

MR. WILLIAMS addresses himself to one of the most practical questions that a parent has to solve. It is also one of very great difficulty. There are the inclinations of the parent, still more the inclination of the boy to be considered. Neither of these inclinations may be founded on any real aptitude on the part of the boy, for too often inclination is merely fancy and not the possession of qualities necessary for success. Harder still is the case where the boy has no inclination, for perhaps a majority accept what turns up rather than find an opening for themselves. When inclination has been discovered, the parent is still confronted with the problem whether his means enable him to put his son into the business or profession of his choice. There are, besides, the special requirements of age, the length of training, and the suitable place of education to be considered, and in most cases the perils and difficulties of competitive examination to be surmounted.

There is no field of social life of equal importance left so to hazard without adequate direction or, perhaps we should say, no labyrinth so tortuous for which no clue is

PREFACE TO THIRD EDITION

provided. In this labyrinth Mr. Williams, from long experience, moves with ease and without bewilderment. His advice, therefore, is eminently opportune; as the boy hails the assistance of the crib in the intricacies of the obscure passages of the classics, so the parent will welcome this crib to the obscurities that mark the avenues leading through examinations to the various professions.

It is a work for which parents will tender heartfelt thanks if they have the fortune to come across it. The Schoolmaster's duty is not only to instruct the young during the hours of school, and to watch him during his school career, but as a result of his observation to help him to the all-important decision of discovery in what direction his talents lie and how he may best use them in the larger field of life that lies beyond the school. The successful Schoolmaster is not only a scholar and a teacher, but is also a man of the world with the knowledge necessary to point out the further paths beyond the schoolroom and the playing-field. The honours list of a school gained in examinations is indeed important, but more important still is the wider honour list of former pupils established successfully and honourably in the businesses of life, grateful to their old School and their former Masters for having started them on the wider road of life.

CARLISLE.

June 4, 1911.

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CAREERS FOR OUR SONS

I

THE CHURCH

THE Ministry of the Church is a sacred commission, but, because it has a practical side, it may legitimately be considered as a profession. The information offered is intended to apply to the Established Church, but the Free Churches are every year making larger demands upon the learning of their ministers, and the information relating to the ancient Universities, the modern Universities, and the Provincial Colleges is equally applicable to the Free Churches. We may well believe that it will be to the advantage of the cause which all the Churches serve, when their ministers are still more largely educated side by side in the common atmosphere of cultured learning, wherein asperities are softened and men are better fitted for the responsibilities that lie before them.

QUALIFICATIONS.—A candidate for Holy Orders ought to enjoy fairly good health. It is true that in some country parishes which do not cover a wide area a man who does not possess a robust constitution may yet do good and useful work ; it is equally true that in many town parishes the demands upon a man's energy are so severe that they

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give scope for the most vigorous vitality. In every sphere good intelligence, based upon a sound education, is imperative, and this intelligence should be linked with tact and sympathy and common sense. Further, candidates too often forget the importance of subordinate qualifications, such as business method, punctuality, and the proper use of the voice to enable them to read clearly and speak distinctly. Above all, the candidate for Holy Orders should be conscious of the deeper issues of human life. The clergyman must regard himself as God's messenger—sent by Him, and ever standing in His presence. In a Lenten address Canon S. A. Alexander urged that in every case "there ought to be, amid the marks of conscientiousness and blameless character and a faithful desire to do the work of the Church, some faint sense of a mission, some dim belief in a divine vocation." However, a young man need not shrink from seeking Holy Orders because he has not felt some overwhelming and tremendous "call"; such "calls" do, no doubt, occur in exceptional cases, but a sober, clean-living, prayerful young Churchman can move forward with a good heart to this great responsibility, knowing that in the solemn experience of his own life and of his work as a clergyman his convictions will inevitably be deepened and illumined.

TRAINING—I. *The Ideal Course.*—A youth should remain at a good school until he is about nineteen, and should then proceed to either Oxford or Cambridge. This course is the more expensive, but, if means will admit, it should be chosen in preference to any other. The advantages of Oxford or Cambridge are so decisive that a training there should be sought, even if it should involve the most severe economy, and often the discipline of such economy

is the noblest preparation for after-life, as was instanced in the case of the late Dr. Temple, Archbishop of Canterbury.

EXPENSES AT OXFORD AND CAMBRIDGE.—

A man cannot take his B.A. degree at either University until he has kept residence for three years (he usually resides each year for three terms of eight weeks). Men who seek honours at Oxford generally remain four years, and they often do so at Cambridge.

The expenses at the two Universities are practically the same, and at either a man may choose to join a College, or become a Non-Collegiate (or unattached) Student.

As a Member of a College.—The expenses of a careful man will range, according to his own tastes and the College which he joins, from £140 to £180 per annum.* Cases have been known where men, with rigid economy, have managed on £120 per annum. These amounts cover travelling, clothes, and books, and all needful College subscriptions, but assume that the student has no expenses to meet during the vacations.

Parents who can afford it will act wisely in allowing their sons to join a College, for the social and other advantages of membership of a time-honoured foundation are important.

Valuable Scholarships and Exhibitions are open to

* In giving these figures, which are based on a large number of actual cases personally known to us, we have in mind the man who desires to be strictly careful in his expenditure; parents may regard them as reliable. For men in easy circumstances £250 per annum may be taken as an average, while extravagant men spend much more, but these are not the class that we are considering. Several of the moderate-sized Colleges at Oxford and Cambridge make a real effort to secure economy of expenditure.

CAREERS FOR OUR SONS

youths of ability, whereby the expenses of residence are substantially reduced, and, in some cases, entirely covered.

As a Non-Collegiate Student.—Expenses by this course can be considerably reduced; they will range, if care is exercised, from £70 to £90 per annum—*i.e.*, about one-half the expenses of College under similar conditions of expenditure. For further official information application should be made to the Rev. the Censor, Students' Delegacy, High Street, Oxford, or to the Censor, Fitzwilliam Hall, Cambridge.

Admission is obtained by matriculation, by passing, or by obtaining exemption from, the "Previous" at Cambridge, or "Responsions" at Oxford; exemption from both the "Previous" and "Responsions" can be secured by a Higher Certificate of the Oxford and Cambridge Board, through the Oxford Senior Local Examination, the Cambridge Senior Local Examination, the London Matriculation, and Northern Universities' Matriculation, and the Examination for the Scotch Leaving Certificate.

For full information as to the different Colleges, the subjects of study for a pass or honours degree, etc., the official handbooks should be consulted—*viz.*, "The Student's Handbook to the University and Colleges of Oxford." 2s. 6d. net. Clarendon Press Repository, 116, High Street, Oxford. "The Student's Handbook to the University and Colleges of Cambridge." 3s. net. University Press, Cambridge.

No candidate for Holy Orders can be ordained a Deacon until he is twenty-three, and many men with great advantage spend a year after taking their degree at a Theological Hall—*e.g.*, Cuddesdon College, Oxford; Wycliffe Hall and St. Stephen's House, Oxford; Ridley Hall and the Clergy Training School, Cambridge; the Clergy

School, Leeds; St. Aidan's College, Birkenhead; St. David's College, Lampeter; Ripon College, Ripon; St. John's Hall, Highbury; Ely Theological College, etc., where they obtain special training, gain an insight into pastoral work, and often prepare for the "Universities' Preliminary Examination of Candidates for Orders," which is accepted by most Bishops in lieu of their own examinations. The Lambeth Conference of 1908 appointed a Committee to consider the question of the supply and training of clergy, and they recommend that "in the case of graduates all candidates should be required to receive at least one year of special training at a Theological College, or under some recognized supervision." The cost of a year's residence at a Theological College may be calculated at £90 as a fair average. The post-graduate courses at Cuddesdon College (Oxford), Wycliffe Hall (Oxford), and Ridley Hall (Cambridge), are strongly recommended.

PRELIMINARIES TO ADMISSION TO HOLY ORDERS.—After obtaining his degree and attaining the age of twenty-three, a candidate is now ready to offer himself to the Bishop for acceptance. The Bishop will appoint a day for an interview either with himself or one of his Chaplains. If the candidate is accepted, he will then be required, if he has not already passed the "Oxford and Cambridge Preliminary Examination of Candidates for Orders," to pass the Bishop's examination for Deacon's Orders. A month at least before Ordination he must furnish the Bishop's Secretary with the following papers:

1. A Certificate of Baptism.
2. A Certificate that he has attended the Divinity Lectures of the Regius Professor at Oxford or Cambridge;

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or the Divinity Testimonium from Dublin, or the Licence in Theology from Durham; or the "Preliminary Examination Certificate"; or a Certificate from a Theological College.

3. Testimonials from his College.

4. The "Si quis," a document challenging objection to his fitness for Holy Orders, which has to be read in Church at least a month before his Ordination, and has to be signed by the officiating Minister and one Churchwarden.

5. A testimonial signed by three beneficed Clergy to whom the candidate is personally known, and of whom the Incumbent, who nominates him to a Curacy, must not be one.

6. A nomination to a Curacy.

The subjects of examination are generally on the lines of the "Oxford and Cambridge Preliminary Examination of Candidates for Holy Orders," and, to take an instance, are as follows in the Diocese of Oxford :

EXAMINATION OF CANDIDATES FOR DEACON'S ORDERS.

I. *The Preliminary Examination*, on February 11, May 13, September 2, and November 18, 1914.

1. **THE NEW TESTAMENT.** Candidates will be expected to show a general knowledge of the New Testament. They will be specially examined in the text and contents of the *Gospel of St. Matthew*, and of the *Acts of the Apostles* xiii.-xxviii., and the *Epistle to the Galatians*.

The **GENERAL KNOWLEDGE** that is required is to be found in the following works :

Sanday's *Outlines of the Life of Christ*.

Robinson's *Study of the Gospels*.

Salmon's *Introduction to the New Testament*, chaps. xii.-xxv.

Sanday's *Inspiration*, Lectures I., VI.-VIII.

2. **ST. AUGUSTINE**, *De Catechizandis Rudibus*.

THE CHURCH

[EXAMINATIONS

II. *The Final Examination*, on May 14 and 15, September 3 and 4, and November 19 and 20, 1914.

1. THE OLD TESTAMENT. Besides a general knowledge of the Old Testament, candidates will be expected to have studied its history and literature in such books as the following :
Sanday's Inspiration, Lectures II.-V.
Kirkpatrick's Doctrine of the Prophets.
Ottley's History of the Hebrews.

A voluntary paper will be set on Hebrew, with passages for translation from Jeremiah xxxii.-xxxviii

2. THE BOOK OF COMMON PRAYER, more especially the Order for Morning and for Evening Prayer, the Litany, and the Order of the Administration of the Holy Communion (Proctor and Frere's *A New History of the Book of Common Prayer* recommended). Hooker's *Ecclesiastical Polity*, Book V., chaps. i.-xlix.

3. DOGMATIC THEOLOGY.

The Thirty-Nine Articles (Gibson's edition recommended).
Hooker's *Ecclesiastical Polity*, Book V., chaps. i.-lvii.

4. THE HISTORY OF THE CHRISTIAN CHURCH down to the Council of Constantinople, A.D. 381.

The Preliminary Examination may be passed—and the Bishop prefers that it should be passed—either three or six months before the time of Ordination.

UNIVERSITIES' PRELIMINARY EXAMINATION OF CANDIDATES FOR HOLY ORDERS.

The Archbishops of Canterbury and York and all the English Bishops have agreed to the following arrangements respecting Ordination Examinations :

1. That the same Special Subjects for Examination be required from candidates for Deacon's Orders in the Old Testament, New Testament, Ecclesiastical History, and Latin.

2. That the General Subjects of the Bishops' Examination be—(a) the contents of the Bible ; (b) the Creeds and Thirty-Nine Articles (history, text, and subject-matter) ; (c) the Prayer-Book (history and contents).

3. That the Subjects for each year's Examination be agreed upon

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for the Ordination and Preliminary Examinations jointly. (The selection of subjects has now been undertaken by the Committee of the Advisory Council.)

The subjects in the following lists are those which have been fixed for 1914 and 1915 in accordance with these arrangements.

SUBJECTS, ETC., FOR 1914 AND 1915.

(No text-books are recommended in any of the subjects. Candidates are desired to use the books recommended by the Bishop from whom they expect to receive Ordination.)

The Examinations in 1914 will commence on Tuesday, March 31, and Tuesday, October 6. They will be in the following subjects :

1. A GENERAL PAPER ON THE CONTENTS OF THE BIBLE.

2. OLD TESTAMENT—

*(a) *Psalms*, Book II. (42-72), and *Psalms* 84, 85, 87-89.

[Candidates will be expected to be acquainted with the Prayer-Book and Revised Psalters.]

(b) The last days of the kingdom of Judah and the commencement of the Captivity, together with *Jeremiah* xxi.-xli. and *Ezekiel* i.-xxiv. (so far as these portions of the prophets illustrate the history).

The paper in these books will contain questions on their subject-matter, criticism, and exegesis, together with questions on "Introduction."

3. NEW TESTAMENT (in Greek)—

*(a) *The Gospel according to St. Matthew*.

(b) *The Acts of the Apostles* xiii.-xxviii., and *Epistle to Galatians*.

The paper in these books will contain passages for translation and questions on the subject-matter, criticism, grammar, and exegesis of the books, together with questions on "Introduction."

Candidates will also be expected to show a general knowledge of the Lord's life and teaching as contained in the Four Gospels.

Passages from the English Version of the selected Books will be given to be rendered into the original Greek.

* These subjects will also be set in 1915.

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4. THE CREEDS AND THE THIRTY-NINE ARTICLES : History, text, and subject-matter. Questions will also be set on Apologetics.
5. THE PRAYER-BOOK : History and contents.

6. ECCLESIASTICAL HISTORY—

(a) The History of the Christian Church to the Council of Constantinople (inclusive).

(b) The History of the English Church from the earliest times to the Accession of Queen Anne.

7. ST. AUGUSTINE, *De Catechizandis Rudibus*.

A passage will also be set for translation into English from some ecclesiastical Latin author not previously specified.

8. A VOLUNTARY PAPER ON ELEMENTARY HEBREW, with passages for translation from *Jeremiah* xxxii.-xxxviii.

N.B.— An opportunity will be given in this paper for showing a knowledge of the Hebrew text of all the selected books of the Old Testament. An asterisk may be obtained by those who do creditably in the Elementary part of this paper only.

Candidates are required to satisfy the Examiners in each of the first seven subjects

The Examinations in 1915 will commence on Tuesday, April 13, and Tuesday, October 5. They will be in the following subjects :

1. A GENERAL PAPER ON THE CONTENTS OF THE BIBLE.

2. OLD TESTAMENT

(a) *Psalms*, Book II. (42-72), and *Psalms* 84, 85, 87-89.

[Candidates will be expected to be acquainted with the Prayer-Book and Revised Psalters.]

* (b) *Isaiah* xl. end.

The paper in these books will contain questions on their subject-matter, criticism, and exegesis, together with questions on "Introduction."

3. NEW TESTAMENT (in Greek)—

(a) *The Gospel according to St. Matthew*.

* (b) *The Epistle to the Romans*.

The paper in these books will contain passages for translation and questions on the subject-matter, criticism, grammar, and exegesis of the books, together with questions on "Introduction."

* These subjects will also be set in 1916.

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Candidates will also be expected to show a general knowledge of the Lord's life and teaching as contained in the Four Gospels.

Passages from the English Version of the selected Books will be given to be rendered into the original Greek.

4. THE CREEDS AND THE THIRTY-NINE ARTICLES : History, text, and subject-matter. Questions will also be set on Apologetics.
5. THE PRAYER-BOOK : History and contents.
6. ECCLESIASTICAL HISTORY—

(a) The History of the Christian Church to the Council of Constantinople (inclusive).

(b) The History of the English Church from the earliest times to the Accession of Queen Anne.

7. ST. AUGUSTINE, *De Catechizandis Rudibus*.

A passage will also be set for translation into English from some ecclesiastical Latin author not previously specified.

8. A VOLUNTARY PAPER ON ELEMENTARY HEBREW, with passages for translation from *Isaiah* xl.-xlviii.

N.B.—An opportunity will be given in this paper for showing a knowledge of the Hebrew text of all the selected books of the Old Testament. An asterisk may be obtained by those who do creditably in the Elementary part of this paper only.

Candidates are required to satisfy the Examiners in each of the first seven subjects.

A fee of twenty-five shillings will be charged to every Candidate who enters the Examination. This fee should not be sent until it is asked for, and, when sent, cannot be returned or carried forward.

Gentlemen who wish to offer themselves as Candidates are requested to send their names, with certificates of moral character and particulars of their degrees, or written forms of nomination from Bishops in cases where such nominations are required, to REV. CANON EVANS, Milton Rectory, Cambridge, before March 1 for the Easter Examination, and before September 1 for the October Examination.

The papers given in previous Examinations, with the Regulations, etc., may be had of DEIGHTON, BELL, AND Co., Cambridge and London, and PARKER AND Co., Oxford, price One Shilling each set, or by post on receipt of thirteen stamps.

N.B.—Candidates, in sending in their names, must give a permanent address.

EXAMINATION FOR PRIEST'S ORDERS.—

After being in Deacon's Orders for a year, permission may be asked to attend the Priest's Examination. The subjects differ in the various dioceses, and information should be obtained from the Bishop's Chaplain.

In the Diocese of Oxford, for example, the examination for Priest's Orders consists of two parts.

Candidates will be required to present themselves for the first part six months after their Ordination as Deacons, unless they propose to remain more than a year in the Diaconate. No Deacon will be allowed to present himself for the second part until three months at least after he has satisfied the Bishop's Chaplains in the first part.

The first part of the Examination will take place on February 11, May 13, September 2, and November 18, 1914.

The second part of the Examination will take place on May 14 and 15, September 3 and 4, and November 19 and 20, 1914.

Due notice of the times appointed will be given by the Bishop's Secretary, Mr. JAMES ROSE, OXFORD.

SUBJECTS OF EXAMINATION FOR CANDIDATES FOR PRIEST'S ORDERS IN THE DIOCESE OF OXFORD.

I. *The Intermediate Examination.*

1. THE BOOK OF ISAIAH.

The following commentaries are recommended :

Cambridge Bible for Schools (2 volumes).

G. A. Smith in the *Expositor's Bible* (2 volumes).

2. BUTLER'S ANALOGY.

With this should be read Spooner's *Bishop Butler* ("Leaders of Religion" Series).

II. *The Final Examination.*

1. THE ACTS OF THE APOSTLES (in Greek).

The following commentaries are recommended :

Rackham's Commentary, or

Knowling's (in the *Expositor's Greek Testament*).

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THE EPISTLE TO THE COLOSSIANS (in Greek).

Lightfoot's *Commentary* recommended.

THE FIRST EPISTLE TO ST. PETER (in Greek).

Bigg's *Commentary* recommended (International Critical Commentary).

2. THE BOOK OF COMMON PRAYER, more especially the Order for the Holy Communion, the Occasional Offices, and the Ordinal (Proctor and Frere's *A New History of the Book of Common Prayer* recommended).

3. DOGMATIC THEOLOGY.

THE DOCTRINE OF THE INCARNATION AND THE SACRAMENTS.

Candidates will be examined in Hooker's *Ecclesiastical Polity*, Book V., chaps. l.-lxviii.; Gore's *The Incarnation of the Son of God*; Moberly's *Atonement and Personality*.

The subject may be further studied in—

Liddon's *The Divinity of our Lord and Saviour Jesus Christ*.

Chase's *Confirmation in the Apostolic Age*.

Illingworth's *Divine Immanence*.

Gore's *Body of Christ*.

4. THE HISTORY OF THE CHURCH OF ENGLAND, especially during the Reformation Period. This should be studied in—

Wakeman's *History of the Church of England* (especially Chapters x.-xv., with the Notes).

The special period may also be studied in

Gairdner's *History of the English Church in the Sixteenth Century*.

TRAINING—II. Courses alternative to Oxford or Cambridge.—If a man cannot afford the expenses involved in a career at Oxford or Cambridge, then a resident degree should be sought at the University of Durham, where many of the opportunities—religious, educational, social, athletic—which attract men to the older Universities, are offered at moderate cost (£70 to £100): the University of the North in its two divisions—the one at Durham, and the other at Newcastle—deserves to be widely known; or at one of the Provincial Universities; or at one of the Scotch Universities; or at Trinity College, Dublin (which also,

grants degrees without residence) ; or at St. Aidan's College, Birkenhead, which is now affiliated to the University at Liverpool ; or at St. David's College, Lampeter.

The degrees of the University of London can be obtained without residence, but their value is much increased when they are obtained through membership of the University of London, at University College, or King's College, London. There is now established in connection with King's College, London, a hostel for (50) theological students, and the advantages offered in this corporate life are of great value. Degrees can also be obtained at the Universities of Liverpool, Manchester, Birmingham, Leeds, Sheffield, Bristol, and the University Colleges of Cardiff, Aberystwyth, and Bangor (the constituent Colleges of the University of Wales). The expenses of these Colleges, when a man resides there, may be reckoned as ranging from £70 to £80 per annum, and a three years' course is generally necessary for a degree. Scholarships and Exhibitions ranging from £25 to £60 are offered for open competition.

A course that is still less expensive is to forego the advantages of a degree and to proceed for training for two years to a Theological College. This course is not advisable save in exceptional cases—*e.g.*, when a man's early education has been neglected, or when his means are very limited. Nevertheless, a man of deep earnestness, determination, and good natural ability, may turn a two years' course at a Theological College to excellent purpose. A man's annual expenses may be reckoned at £70 on an average. Two of the best of these Theological Colleges at the present time are St. David's College, Lampeter, and St. Aidan's College, Birkenhead, and at both Colleges the abler men have the opportunity, if they find they can afford the time, of securing a degree.

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There is a great need of Clergy in the Colonies, and a young man who is drawn to work in this inspiring direction can obtain a good training at very moderate cost at Trinity College and Wycliffe College in the University of Toronto, the Diocesan College, Montreal, or King's College, Windsor, Nova Scotia.

PROSPECTS.—The stipend of a Curate in Deacon's Orders will be from £120 to £150, and, on proceeding to Priest's Orders, he may expect from £140 to £160, or even, in important parishes, £200 per annum. There is a great demand for Curates, and the supply is inadequate. The financial conditions of a young Curate are quite satisfactory so long as he remains unmarried, but he must bear in mind that Incumbents do not usually seek Curates who are over forty.

An able and earnest Curate may hope in five to ten years to obtain an Incumbency. Incumbencies, however, at present are not in many cases very desirable. Of the 14,242 parishes, the income of the Incumbent in nearly 6,000 falls below £200 per annum, and in 10,000 below £300, in over 1,000 it is less than £100, and in but few does it reach £400 and upwards. The average net value of a benefice in Wales varies from £171 in the diocese of St. David's to £228 in St. Asaph. In England the lowest average values are £196 in Hereford and £203 in Oxford. In Sodor and Man it is as low as £164. An effort is being made in many dioceses to bring the value of the poorer Incumbencies up to £200 per annum, and the income of an Incumbent is often gracefully augmented by the Easter offerings of his parishioners.

The Ecclesiastical Commissioners made an announcement in January, 1908, which, the Archbishop of

Canterbury says, has had the effect of augmenting the incomes of 1,000 benefices. Where a benefice, which is in public patronage, has been in existence three years and the population is 1,000 or more, the stipend is raised unconditionally to £200 a year. Some others are also to be improved. The Primate expresses the opinion that every Incumbent ought to have £300 per annum secured to him, and says this will now be a possible achievement.

There are, further, the "dignities" in the Church, whether as Bishop, Dean, Archdeacon, Chancellor, or Residentiary Canon, which are positions of great influence: many of them still carry with them good stipends, but it must be borne in mind that they have to meet many exacting claims. Mere influence—whether political or social—is still, unfortunately, an occasional factor in the appointment to "dignities" in the Church of England, but merit and ability are every year receiving clearer recognition, and the appointing authority, whether it be Prime Minister or Bishop, must, under pressure of public opinion, give due consideration to a man's fitness for preferment.

II

THE ARMY

THE profession of arms is one of the noblest of professions, terrible though war is. There has been a great deal of discussion recently in Army circles about the vexed question of shortage of officers. As a matter of fact, this is a question which is extremely easy of solution, if the authorities will only probe the real cause of the lack of officers.

Fifteen and more years ago the sons of the aristocracy and the plutocracy used to enter the Army avowedly for the purpose of enjoying life, and at the same time gave their services gratis to their country. The question of pay and the difficulty of meeting messing bills never for a moment entered their heads. They were very well off, and became officers because they wished to serve their Sovereign, and because their fathers wished them to be subjected to suitable discipline before they settled down and managed their estates. In those days the Service was far from arduous, and yet, for all that, as can be seen from the records of all the regiments, they acquitted themselves splendidly. Perhaps they were not all of them conspicuous for their actual brain-power, but they possessed one qualification which should not be ignored—namely, a full, thorough, intimate understanding of human nature, and therefore the power of inspiring their men with devo-

tion. They came of good stock, and their men knew it : there was no lack of private soldiers in those days. Of both officers and men there was a superabundant supply.

It might well be worth the while of the War Office to attract these old-style officers once more to the Army. Less harrying and worrying and driving and red-tape would conduce greatly towards these young men joining the Army. Let them enter the Army easily, let them, so far as pay is concerned, be "honorary" members of the Service, and reward them by rendering the Service less arduous in their case than in the case of men who enter the Service from more serious motives. Look at the Universities : we have the "Honoursmen," who are in receipt of money given by the University and the Colleges in the shape of scholarships, and we have "Passmen," who receive from the University not a penny. The former have to work hard to take high places in order to do credit to the University which provides their scholarship-money : the latter are simply required to behave themselves properly, and ultimately to pass a very easy examination.

If the Universities were suddenly to refuse any undergraduates who wished to "go out" as a Passman, they would soon suffer from shortage of undergraduates, in the same way that the Army is suffering from a shortage of officers.

So much for the sons of the aristocracy and the plutocracy, who are well able to pay their way without receiving any remuneration whatever for their services.

Now let us consider the case of the sons of professional men, business men, clergy, and so forth. Service in the British Army for young men who are keen and ambitious offers many inducements. There are many hundreds of

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the sons of country gentlemen, professional men, and so on, who would love above all things to embark on a career in the Army, but their funds will not permit of it.

There has recently been some interesting correspondence about the Army officer's pay in one of our leading daily papers. The upshot of the remarks is that the *poor man cannot possibly live on his pay*. There are very few men in England who will deny the truth of this assertion. Any young man desirous of entering the Army must have at least £100 a year of his own, and ought to have more than that sum if he is to be spared all worry about mess bills.

Let the authorities at the War Office confer together and decide to pay these young Cadets more, but only on the condition that, both with mind and body, they do credit to the Service which pays them. In other words, observe the same kind of rule that is observed at the Universities. Let the rich man who wants to enter the Service "for the fun of the thing," as well as from patriotic motives, be paid practically nothing, and let his poorer *confrère* be paid a "living wage."

If the authorities reply to this that an officer who joins more for the enjoyment of the life than for serious professional work as a soldier is of no use to them at all, let them have nothing to do with him, but in that case let them see to it that others, in every way suitable, but debarred solely by lack of funds from becoming officers, be paid sufficiently to enable them to join.

It has been well argued by many business-men that no parent expects to have his son taught his business for nothing. They very sensibly point out that such parents have to pay a premium on the boy entering a firm.

Well, no parent minds paying the required premium

to the Army in the shape of necessary training at Woolwich or at Sandhurst. He pays it willingly. What he does object to is having to pay *annually* a sum of about £100 in order that his son may be able to continue in the Army when once the premium (which in his case has been fees to the Military Academy or the Military College, cost of uniform, etc.) has been paid.

The authorities are offering pay for a *very short period* in the shape of scholarships, while the Cadet is going through his short course of tuition. This is, surely, offering inducement in the way of pay at the wrong time, and in too small quantity. The average parent would wish to know that, once his son has been trained sufficiently to enter his regiment, he, the parent, shall have little or no further expense.

The so-called “Qualifying” Examination, and also the “School Leaving Certificate” have both been entirely dropped now, so far as the Army is concerned. A boy who wishes to enter the Army through Woolwich has to fill up almost identically the same papers as the boy who wishes to pass into Sandhurst. The obligatory subjects are the same in each case. The difference lies in this, that the Woolwich boy has to offer *more* subjects as obligatory subjects than his friend who is contented to go to Sandhurst. As will be seen further on, a Woolwich candidate must offer Science and Higher Mathematics.

Supposing a boy who has gone up for either Woolwich or Sandhurst fails to pass into either, and suppose that he has managed to obtain 33 per cent. marks in each of his obligatory subjects—such a candidate is said to have “qualified.”

This does not allow him to enter the Army, *unless* there is such a shortage of candidates that the authorities are

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willing, by way of exception, to accept those who only just qualify. If the competition is at all keen, such a candidate gains nothing from his act of "qualifying," except probably experience in examination work, which has a certain value.

To have "qualified," however, in certain obligatory subjects—namely, English, English History and Geography, Elementary Mathematics (A), and either French or German—will enable him to enter, if old enough, without further examination, into the Special Reserve of Officers, the Malta Militia, the Bermuda Militia, the Channel Islands Militia, and the Territorial Service. Should he wish to enter the Royal Artillery, he must pass also in Physics and Chemistry (called "Science" for short), and in Intermediate Mathematics.

We will now consider the case of the keen, able youth, who is looking to the Army as a profession.

PROSPECTS.—Great careers are open to the youth of sound physique, good intelligence, and endowed with a love of sport and adventure. This type of officer must have brains, and be thoroughly in earnest about his profession.

During their careers, important posts and appointments are open to Army men, either by qualifying, by passing certain examinations, or by service in the field, among them being such appointments as Military Attachés at Foreign Courts, Governorships of Colonies, on the Staff of the Forces in our Oversea Colonies, and service in the Egyptian and Indian Army, and, if the chance of active service find him equal to the occasion, he has every prospect of attaining high rank.

The Army man gains much in experience by travel and the study of warfare and politics, and thus becomes a

broader-minded man than the average citizen, and more fitted to control and advise.

Love of adventure has caused many officers to carve a name for themselves. The same spirit has caused them to take service in foreign armies.

In the Russo-Turkish War, English officers, both naval and military, were found fighting on the side of the Turks; again, in the Franco-German War, English officers fought for the French.

Others have taken service under dusky potentates, and have risen to high positions, being not only rewarded by the monarch who employed them, but by their own country—Kaid Sir Harry Maclean to wit.

Our knowledge of the world is largely due to those men of both Services who have explored the unknown regions at the risk of their lives, and, departing, have left behind them “footprints on the sands of Time.”

Opportunities for any of the above, in some part of the world where England rules, are seldom wanting—the East and West Coast of Africa, Egypt, the frontier of India, or service in the Indian Army.

Great possibilities, then, lie before the well-trained officer, who must be a man quick and ready to take advantage of his opportunities. All our great military leaders are men who saw their opportunity and took advantage of it.

The prospects are good, but they cannot be had simply for the asking. Parents must be prepared to face some considerable outlay in order to prepare their sons for a commission in the Army. The question of the money for the preparation does not trouble the mind of the youth concerned to any extent, but it is a serious problem for the parent.

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In considering the Army as a career, the question of pay, and being able to live on it, confronts both father and son. The father must be prepared to supplement his son's pay for some years after the latter has obtained his Commission, and the son to make the most of a limited income, till it increases by virtue of service or the securing of an appointment.

REGIMENTAL PAY.—A parent must calculate that a young officer's original outfit will cost £100, and in Cavalry Regiments about £150, and that it will be necessary to supplement his regimental pay for some years to the extent of from £50 to £150 in the Royal Artillery and Infantry, and from £300 upwards in the Cavalry. There is an earnest desire on the part of the Military Authorities to lessen expenses, so that a young officer's pay may be more adequate to meet the demands made upon it. Expenses vary widely in the different regiments, and it would be well, before selecting a regiment, for the parent to write for information on the question of expenses to the Colonel, who will usually be ready to give the needful guidance. A young officer's pay in the Royal Army Medical Corps, Royal Engineers, Army Service Corps, and Indian Army should be sufficient to enable him to live on it: this is certainly the case in the Indian Army, where his pay begins at about £300 a year, but for this he must be exceptionally well qualified.

THE COMPOSITION AND GOVERNMENT OF THE ARMY.—The Army is composed of those who have undertaken a definite liability for service—*i.e.*, fighting troops and administrative services and departments.

The Army in the United Kingdom comprises :

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(a) The Regular Forces, with their Reserves, including the Special Reserve.

(b) The Territorial Force, including the Territorial Force Reserve.

Supplementary to the Army, but without definite liability for service unless otherwise undertaken, are :

(c) The Royal Military College, the Royal Military Academy, the Duke of York's Royal Military School, the Royal Hibernian Military School, and the Queen Victoria School.

(d) Officers' Training Corps.

(e) The National Reserve.

(f) Such categories of the Technical Reserve as are sanctioned by, and are raised under, the authority of the Army Council.

(g) Officially recognized Cadet units.

For financial reasons, it is not possible to maintain the Regular Forces at war establishment in time of peace. On this account the Regular Forces are organized in such a way as to be dependent on the Army Reserve for the additional numbers required to place them on a war footing. :

The *government* of the Army is vested in the Crown. The *command* of the Army is placed in the hands of the Army Council, who are responsible for the *administration* of the Regular Forces. The administration of the *Territorial Force* is in the hands of the *County Associations* at all times, other than when called up for annual training, when embodied, or when on actual military service.

The *Army Council* is composed of seven members, four military and three civil, as follows :

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The Secretary of State for War.

The first military member, the Chief of the Imperial General Staff.

The second military member, the Adjutant-General to the Forces.

The third military member, the Quartermaster-General to the Forces.

The fourth military member, the Master-General of Ordnance.

The civil member, the Parliamentary Under-Secretary of State.

The finance member, Financial Secretary to the War Office.

The *Imperial General Staff*, created in 1906, is the brain of the Army. It is composed chiefly of officers who have passed through the Staff College, and whose names have been placed on a list of specially qualified officers, called the General Staff List. This General Staff List has for its chief functions to advise on the strategical distribution of the Army; to supervise the education of officers, and the training and preparation of the Army for war; to study military schemes; to collect and collate military intelligence; and to direct the general policy in Army matters.

Approved service on the General Staff is recognized by accelerated promotion.

BRANCHES OF THE SERVICE.

1. HOUSEHOLD TROOPS.

General Information.—Consist of: 1st and 2nd Life Guards, Royal Horse Guards (the Blues), four regiments of Foot Guards.

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Stations: Life Guards and Royal Horse Guards London and Windsor. Foot Guards—London, Windsor, and Aldershot, with intervals at Pirbright.

Pay on Joining as Second Lieutenant.—Cavalry, 6s. 8d. a day. (For allowances, see p. 39.)

Foot Guards, 5s. 3d. a day, plus £70 a year Guards pay. When the officer is stationed in the West End of London, Guards pay is in lieu of all allowances except travelling, forage, and stabling.

Channels through which Commissions may be obtained.—Royal Military College, Sandhurst; Universities (including Universities in the Overseas Dominions and Crown Colonies); Special Reserve of Officers; Militia; Territorial Force; Royal Military College, Kingston, Canada; Military Forces of the Overseas Dominions and Crown Colonies; the ranks of the Regular Army.

Notes and Conditions.—Candidates must qualify in the same manner as those for Cavalry or Infantry of the Line, and must in addition be nominated by Colonels of regiments, to whom application should be made.

As a temporary measure, and subject to certain conditions, officers commanding regiments of Household Cavalry and Foot Guards may nominate gentlemen for His Majesty's approval for probationary commissions in their respective regiments. For further particulars application should be made to the Colonel of the regiment to which appointment is desired.

2. CAVALRY.

General Information.—Divided into: Dragoon Guards—seven Regiments; Dragoons—three Regiments; Hussars—twelve Regiments; Lancers—six Regiments.

Officers are supplied with two chargers at the public expense. If they desire to use them for other than

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military purposes they may do so on payment of £10 a year for each horse.

Pay on joining as Second Lieutenant.—6s. 8d. a day. (For allowances, see p. 39.)

Channels through which Commissions may be obtained.—Royal Military College, Sandhurst; Universities (including Universities in the Overseas Dominions and Crown Colonies); Special Reserve of Officers; Militia; Territorial Force; Royal Military College, Kingston, Canada; Military Forces of the Overseas Dominions and Crown Colonies; the ranks of the Regular Army.

Notes and Conditions.—For Cavalry commissions through the Royal Military College, see Appendix A, *Methods of Entering the Regular Army*.

3. ROYAL ARTILLERY.

General Information. — Divided into: Royal Horse Artillery and Royal Field Artillery (Royal Horse Artillery officers are selected from Royal Field Artillery).

Royal Garrison Artillery (Coast Defence, Heavy, and Siege).

Mountain Artillery, British and Native (Mountain Artillery officers are selected from Royal Garrison Artillery).

Pay on joining as Second Lieutenant.—Royal Horse Artillery, 7s. 8d. a day.

Royal Field Artillery, 5s. 7d. a day.

Royal Garrison Artillery, 5s. 7d. a day, plus 2s. a day armament pay after passing a professional examination.

British Mountain Artillery, 5s. 7d. a day.

(For allowances, see p. 39.)

Channels through which Commissions may be obtained.—Royal Military Academy, Woolwich; Universities (in-

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cluding Universities in the Overseas Dominions and Crown Colonies); Artillery of the Special Reserve of Officers; Militia Artillery; Artillery of the Territorial Force; Royal Military College, Kingston, Canada; Military Forces of the Overseas Dominions and Crown Colonies; the ranks of the Regular Army (as District Officers).

Notes and Conditions.—As to the selection of Royal Military Academy Cadets, see Appendix A, *Methods of Entering the Regular Army*.

4. ROYAL ENGINEERS.

General Information.—This corps offers several roads to advancement in different branches of engineering.

Besides actual Army work, there are openings with good pay in the Public Works Department in India, Survey of India, Colonies, Board of Trade, etc.

Pay on joining as Second Lieutenant.—5s. 7d. a day, plus Engineer pay, as follows: while under instruction, 2s. a day; after passing School of Military Engineering, 4s. a day. (For allowances, see p. 39.)

Channels through which Commissions may be obtained.—Royal Military Academy, Woolwich; Royal Military College, Kingston, Canada; through the ranks (as Coast Battalion Officers).

Notes and Conditions.—As to the selection of Royal Military Academy Cadets, see Appendix A, *Methods of Entering the Regular Army*.

5. INFANTRY.

General Information.—There are at present 69 regiments of Infantry, which contain 148 regular battalions. A few regiments have four regular battalions each, the remainder have two.

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These regiments have national and county connection, and, as far as possible, officers are appointed to regiments with which they have family or territorial association.

H.M. the King and H.R.H. the Duke of Connaught nominate officers for the King's Royal Rifle Corps (60th Rifles) and the Rifle Brigade respectively.

Pay on joining as Second Lieutenant.—5s. 3d. a day. (For allowances, see p. 39.)

Channels through which Commissions may be obtained.—Royal Military College; Universities (including Universities in the Overseas Dominions and Crown Colonies); Special Reserve of Officers; Militia; Territorial Force; Royal Military College, Kingston, Canada; Military Forces of the Overseas Dominions and Crown Colonies; the ranks of the Regular Army.

6. WEST INDIA REGIMENT.

General Information.—Consists of two battalions, which are stationed at Sierra Leone and in detachments in the West India Islands.

Leave.—There are special rules for leave, which are laid down in the King's Regulations.

1. One year's leave with free passage to and from the United Kingdom—after five years' continuous service with the regiment. Any portion of this service spent on the West Coast of Africa (including time spent on sick leave in Madeira or Canary Islands, or on ordinary leave of sixty-one days) counts threefold.

2. Six months' leave with passage to and from the United Kingdom—after one year's continuous service on the West Coast of Africa (including time spent on sick leave in Madeira or Canary Islands, or on ordinary leave of sixty-one days).

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Pay on joining as Second Lieutenant.—5s. 3d. a day, plus 3s. a day while employed on the West Coast of Africa—including ordinary leave not exceeding sixty-one days a year, and any time spent at Madeira or the Canary Islands on sick leave. (For allowances, see page 39.)

Channels through which Commissions may be obtained.—

Royal Military College; Special Reserve of Officers; Militia; Territorial Force; Universities (including Universities in the Overseas Dominions and Crown Colonies); Military Forces of the Overseas Dominions and Crown Colonies; the ranks of the Regular Army.

Notes and Conditions.—The method of entry is the same as for other Infantry regiments, but a candidate is allowed to compete up to twenty-one years of age for admission to the Royal Military College. This, however, is on the understanding that on passing out he must go to the West India Regiment, and cannot go to any other regiment.

7. ARMY SERVICE CORPS.

General Information.—The Army Service Corps is a combatant corps, and the officers belonging to it possess all the privileges of other combatant officers, and are eligible for admission to the Staff and Ordnance Colleges.

An officer transferred from other branches of the Service is appointed to the Army Service Corps as Second Lieutenant on probation for one year. The pay, except for Lieutenant-Colonels, is the same as for the corresponding ranks in the Infantry, with the addition of Corps pay, which varies from 2s. 6d. to 6s.

Pay on joining as Second Lieutenant.—5s. 3d. a day, plus 2s. 6d. Corps pay. (For allowances, see page 39.)

Channels through which Commissions may be obtained.—Royal Military College; Special Reserve of Officers;

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Militia; Territorial Force; Universities (including Universities in the Overseas Dominions and Crown Colonies); Royal Military College, Kingston, Canada; transfer from other branches of the Service.

Notes and Conditions.—Officers on the Active List transferred must have not less than one year's commissioned service, be under twenty-four years of age, and have passed in for promotion, and produce medical and other certificates. An officer of the Indian Army is not eligible. Officers must be unmarried.

Officers of this corps are eligible for employment with the Indian Supply and Transport Corps, in which a limited number of vacancies are kept open for junior ranks. While so attached they receive pay and emoluments at the same rates as officers of corresponding ranks belonging to the Indian Army.

8. ROYAL ARMY MEDICAL CORPS.

General Information.—Officers are gazetted to the Royal Army Medical Corps as Lieutenants (on probation), and after passing examinations in London and at Aldershot their commissions are confirmed. They are eligible for promotion to Captain after three and a half years' service and Major after twelve years' service, provided they have passed the necessary tests. Promotion to Lieutenant-Colonel is by selection from Majors who have duly qualified. Accelerated promotion is granted to officers who distinguish themselves at the examination for promotion to the rank of Major.

Pay on joining as Lieutenant (on probation).—14s. a day.

Channels through which Commissions may be obtained.—Competitive Examination, followed by courses of study at the Royal Army Medical College and at Aldershot. (For

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further information, see official *Regulations for Admission to the Royal Army Medical Corps.*)

Notes and Conditions.—A candidate must be between twenty-one and twenty-eight years of age, and must be registered under the Medical Act.

He must complete the form of application and declaration which can be obtained from the War Office, and submit it, together with an extract from the register of his birth and his medical registration certificate, to the Secretary, War Office.

The dean, or other responsible authority, of the medical school in which the candidate completed his course as a medical student, is requested to render a confidential report as to the candidate's character, conduct, professional ability, and fitness to hold a commission in the corps.

After the form of application and the confidential report above alluded to have been received, the candidate is required to attend at the War Office about two days before the competition for the purpose of being interviewed and undergoing physical examination, and it is then decided if he may be allowed to compete for a commission.

9. ARMY VETERINARY CORPS.

General Information.—Candidates, after passing a Veterinary Qualifying Examination, are gazetted as Lieutenants (on probation), and after passing the necessary examination their commissions are confirmed. They are eligible for promotion to Captain after five years', and Major after fifteen years' service. Promotion to Lieutenant-Colonel and Colonel is by selection.

Pay on joining as Lieutenant (on probation).—£250 per annum.

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Channels through which Commissions may be obtained.—For full information see official *Regulations for Admission to the Army Veterinary Corps*.

Notes and Conditions.—A candidate must be between twenty-one and twenty-seven years of age, and a registered member of the Royal College of Veterinary Surgeons. On receiving a satisfactory confidential report on him from the Dean or other responsible head of the veterinary school in which he completed his course, the Director-General decides if he may compete for a commission. After being medically examined, he has to compete in the Entrance Examination on vacancies occurring (see also p. 154).

10. ARMY ORDNANCE DEPARTMENT.

General Information.—Consists of:

1. **Directing Staff.**—First appointment to the Directing Staff of the Army Ordnance Department is as Ordnance Officer Fourth Class or as Assistant Inspector. The appointment is for three years (including one year's probation), which may be specially extended to five.

(For further information see the Pay Warrant, and the King's Regulations.)

2. **Executive officers** commissioned from the ranks of Warrant Officers, Army Ordnance Corps.

3. **Inspectors of Ordnance Machinery**—appointed after examination by Civil Service Commissioners. Limited competition of candidates selected by the Secretary of State for War.

Pay on Joining.—The pay is as follows:

1. On first appointment to the Directing Staff:

Assistant Inspector, £450 a year, with lodging allowance.

Ordnance Officer, Fourth Class, 22s. 6d. a day, with allowances.

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2. 11s. to 19s. a day, with allowances.

3. 13s. to 26s. a day, with allowances.

Channels through which Commissions may be obtained.—
By transfer from the combatant branches of the Service.

Notes and Conditions.—A candidate for the Directing Staff of the Army Ordnance Department must have passed the ordnance course or the advance class at the Ordnance College.

Application to attend the course at the Ordnance College must be made through the candidate's commanding officer to the War Office not later than May 31, and the candidate must pass an examination which is both qualifying and competitive. (See the King's Regulations.)

THE ARMY PAY DEPARTMENT.—The Army Pay Department consists of officers of various grades of Paymasters, who hold substantive rank, from Colonel to Assistant Paymaster, corresponding with their grade. The men belong to the Army Pay Corps, which is officered and commanded by the officers of the Army Pay Department. The Command Paymaster at the Headquarters of each Command is the Commanding Officer of all officers of the Department or men of the Corps in his area, and supervises all pay offices in the Command. A Paymaster is appointed cashier in each Command, and, under the immediate direction of the Command Paymaster, issues and receives all cash.

Rates of Pay.—Officers of the Army Pay Department receive the following daily rates of pay, together with the departmental allowances of their rank :

				£	s.	d.
Chief Paymaster	...	...	...	...	1	15 0
Staff Paymaster	...	...	...	...	1	2 6
Staff Paymaster after five years as such	1	5 0
Paymaster on appointment	0	10 0

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			£	s.	d.
Paymaster after five years as such	0	12	6
Paymaster after eight years as such	0	14	0
Paymaster after eleven years as such	...	...	0	15	6
Paymaster after fourteen years as such	...	...	0	17	0
Paymaster after seventeen years as such	...	...	0	18	6
Paymaster after twenty years as such	...	...	1	0	0
Assistant Paymaster on appointment	...	...	0	9	0
After five years commissioned service on full pay	...	...	0	10	6
After ten years commissioned service on full pay	...	...	0	12	0
After fifteen years commissioned service on full pay			0	13	6
After twenty years commissioned service on full pay			0	15	0

THE ARMY IN INDIA.—The supreme executive authority in military affairs in India is the Governor-General in Council. The Commander-in-Chief is the Member of the Council in charge of the Army Department, and is responsible for the command, discipline, organization of the forces, and for all supplies and manufactures.

The Military Accounts Department deals with all Army finance.

Under the Commander-in-Chief are the Secretariat of the Army Department and the Headquarter Staff. The latter consists of—

The General Staff Branch.

The Adjutant-General's Branch.

The Ordnance Branch.

The Military Works Branch. •

The Medical Branch. •

Each branch is divided into sections dealing with certain specified matters on similar lines to the Staff at the War Office.

The Army in India consists of the British troops stationed there and the various Native Regular Regi-

ments. In addition there are the Volunteers (British and Eurasian), the Reserves of the Native Army (Cavalry and Infantry), the Imperial Service troops, the Frontier Militia, and the Indian Military Police.

The British officers of Native forces, except Artillery and Engineers, all belong to the Indian Army, and are appointed to the various regiments.

An officer selected for the Indian Army is attached by the War Office to a British regiment in India for one year, with the Indian pay of his rank as an officer of the British Army. He is then admitted by the Commander-in-Chief in India to the Indian Army as a Second Lieutenant, and appointed to a Native regiment.

Subject to certain conditions as regards fitness, language, proficiency, etc., he is promoted to the succeeding ranks after two and a quarter, nine, eighteen, and twenty-six years' service from his first appointment to a permanent commission.

Pay on joining as Second Lieutenant.—Rs. 202.12.5 per mensem while serving on the Unattached List with a British Infantry battalion; Rs. 250.10.4 when with a Cavalry regiment.

Afterwards the rates vary in the various classes of Native regiments, but the lowest is Rs. 280 per mensem as Lieutenant or Second Lieutenant, plus Rs. 100 as Double Company Officer.

There are certain allowances, and also special rewards for proficiency in certain Oriental languages.

Channels through which Commissions may be obtained.—Royal Military College, Sandhurst; Royal Military College, Kingston, Canada; Universities in the United Kingdom; by transfer from British regiments or batteries serving in India; also by exchange from British service under certain

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conditions (see official pamphlet, *His Majesty's Indian Army, Information regarding Appointment*, etc.).

Notes and Conditions.—King's Cadets, King's Indian Cadets, and Hon. King's Indian Cadets are, during their last term at the Royal Military College, given the option of electing to join the Indian Army on passing out. Other vacancies in the Indian Army are allotted, in order of merit, to successful candidates at the Final Examination at the Royal Military College, Sandhurst (see official pamphlet, *His Majesty's Indian Army, Information regarding Appointment*, etc.).

The number of appointments made to the Indian Army each year is, roughly, as follows :

About seventy from the Royal Military College, Sandhurst (thirty-five each half-year).

One from the Royal Military College, Kingston, Canada.

One from the Royal Marines (application to be made to the Secretary, Admiralty).

A considerable number by transfers from British regiments and batteries in India.

Twelve from Universities in the United Kingdom.

(For certain appointments to the Indian Supply and Transport Corps from the Army Service Corps, see p. 30.)

COLONIAL CORPS.—Consist of—

Local Companies of Royal Garrison Artillery.

Local Companies of Engineers.

West India Regiment.

Royal Malta Artillery.

West African Regiment.

Malta Regiment of Militia.

In addition to these forces, which are under the War Office and paid out of the Army Votes, there are a

considerable number of Native levies which have been formed in recent years in Africa, and are administered under the Colonial Office. These forces are all composed of African natives, and officered by Officers of the Regulars and Special Reserve, seconded for that purpose.

OVERSEA FORCES.—In the self-governing Dominions and in some of the Colonies, Forces are raised and maintained at the expense of their respective Governments. South Africa, Canada, Australia, and New Zealand have permanent Forces of varying strength, and in many cases composed of all arms. These Forces are organized, trained and paid on the British system. Officers of the Imperial Service are lent by the Imperial Government, to command and assist in the training of these Forces. There is also a system of the Imperial Army and those Colonial Forces.

AVIATION.—An Aeronautical Service for naval and military purposes has been established under the name of the Royal Flying Corps. This Corps consists of a Naval and a Military Wing, a Central School and a Reserve. The Naval Wing and the Naval members of the Reserve are under the Admiralty; the remainder are administered by the War Office.

The Military Wing is at present organized as follows:

Wing Headquarters.

Seven Aeroplane Squadrons, each providing twelve aeroplanes.

One Airship and Kite Squadron, providing two airships and two kites.

One Line of Communications Royal Flying Corps workshop.

An aeroplane squadron has an establishment of a Headquarters, consisting of seven officers and fourteen

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other ranks; and three Flights, each consisting of four officers and thirty-nine other ranks; the total strength of the Squadron (including attached) being nineteen officers and 153 other ranks.

Officers of the Royal Flying Corps are graded as—

Commanding Officer.

Squadron Commander.

Flight Commander.

Flying Commander.

Officers may be transferred from the Regular Army or join from the Special Reserve or Territorial Force, and serve in the Corps for four years, after training at the Central School.

The Central Flying School has been established on Salisbury Plain. The buildings include accommodation for the Instructional Staff, students, and mechanics, and the necessary sheds for aeroplanes and workshops for their repair.

The establishment of the School is twelve officers and instructors, and fifty-four other ranks, with twenty mechanics and labourers for the workshop.

The present establishment (1913-14) of the Royal Flying Corps (Military Wing) is 1,005 all ranks.

The duties of the School are the training of the personnel for the Corps in the art of flying, general principles of the construction of aeroplanes, and all branches of aerial navigation, and the military uses of aeroplanes.

The Reserve of the Corps consists of such officers or civilians as receive commissions after training, and who will remain available for service for four years, and the men of the Corps who have been transferred to the Reserve.

The Aircraft Factory carries out repairs and reconstructions, experimental work and tests, and the higher training of mechanics for the Corps.

Rates of Pay are laid down in the Royal Warrant for Pay and Promotion.

INCREASED ARMY PAY.—By a recent Royal Warrant the pay of the Army Officer has been increased.

1. The command pay of a Lieutenant-Colonel, Royal Artillery, in Article 248 (c), and of the Officer commanding a regiment of Cavalry of the Line or a battalion of Infantry of the Line in Article 248 (c), shall be increased from 3s. a day to 5s. a day.

2. A Major after twenty-four years' service shall be granted an increase of 2s. a day.

3. A Major of Cavalry or Infantry (including the Household Cavalry and Foot Guards) with less than twenty-four years' service shall receive the rate of pay now given to a Major after two years' service in the rank.

4. A Captain shall receive an increase of 3s. a day after three years' service in the rank provided that he has at least twelve years' service.

5. A Lieutenant after six years' service shall receive an increase of 2s. 6d. a day, in lieu of the increase of 1s. a day now granted after seven years' service in the rank, provided that he is certified by his Commanding Officer as practically efficient in the command of men.

6. The regimental pay of a Captain having higher rank by brevet shall not exceed the lowest rate for a substantive Major of the arm of the service to which he belongs.

ALLOWANCES—Allowances, etc., applicable to all branches except the Indian Army.—In addition to the pay

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REGULAR ARMY—DAILY REGIMENTAL PAY.

	Household Cavalry.		Cavalry of the Line.		Royal Horse Artillery.		Royal Field Artillery.		(4) Royal Garrison Artillery.		(1) Royal Engineers.		(2) Foot Guards.		Infantry.		(5) Army Service Corps.		Royal Army Medical Corps.	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
Second Lieutenant ...	6	8	6	8	7	8	5	7	5	7	5	7	5	3	5	3	5	3	—	*
Lieutenant ...	9	0	7	8	8	10	6	10	6	10	6	10	6	6	6	6	6	6	14	0
Captain ...	13	6	13	0	15	0	11	7	11	7	11	7	11	7	11	7	11	7	15	6
Major ...	15	6	15	0	18	6	16	0	16	0	16	0	13	7	13	7	13	7	23	6
Lieutenant-Colonel...	24	6	24	6	24	9	23	0	19	6	18	0	18	0	23	0	18	0	30	0
(3) Adjutant, if Lieutenant ...	3	6	5	0	2	6	2	6	2	6	2	6	3	6	5	0	3	6	—	—
Adjutant, if Captain ...	2	6	5	0	2	6	2	6	2	6	2	6	2	6	5	0	2	6	—	—

(1) In addition to Engineer Pay, viz.: Second Lieutenant and Lieutenant, 4s.; Captain, 6s.; Major, 9s.; Lieutenant-Colonel, 14s.

(2) In addition to Guards' Pay, viz.: Second Lieutenant and Lieutenant, £70 per annum; Captain, £140; Major, £170; Lieutenant-Colonel, £200.

(3) In addition to Regimental Pay.

(4) In addition to Armament Pay, viz.: Second Lieutenant and Lieutenant, 2s.; Captain, 3s.; Major, 3s. 6d.; Lieutenant-Colonel, 5s.

(5) In addition to Corps Pay, viz.: Second Lieutenant, 2s. 6d.; Lieutenant, 3s. 6d.; Captain, 4s.; Major, 5s. 4d.; Lieutenant-Colonel, 6s.

* Commissioned as Lieutenants.

shown opposite, certain other pecuniary advantages are received by officers of His Majesty's Forces (see Regulations for Allowances of the Army); also special rewards for proficiency in foreign languages (see Regulations).

Free quarters for unmarried officers, or lodging allowance where quarters are not available.

Quarters and messes furnished at public expense, with nominal deduction made from pay for hire of furniture.

Travelling, fuel, and light allowances.

Soldier servant, or in the case of the Royal Engineers and Army Service Corps, and in certain cases for other regimental officers, an allowance in lieu, also groom for mounted officers.

Forage (for mounted officers).

Free medical attendance under certain conditions.

Colonial allowance in certain stations abroad.

Retired pay, gratuities, wound gratuities, pensions.

TRAINING—The Courses to Follow—Public Schools.—

A youth should be placed at thirteen to fourteen in a Public School and receive a sound general education, particular attention being paid during his last two years to Mathematics and Modern Languages.

From these Schools, which have a strong modern side, he may obtain admission direct into Sandhurst or Woolwich. If the training at school is not sufficiently specialized to secure admission direct into the Military Colleges, he should be sent direct to a good Army Coach.

University Candidates.—Parents are strongly advised to consider the great advantages offered to University men who seek entrance into the Army, for the War Office is evidently anxious to secure candidates of this type. Such candidates are eligible for any Branch of the Regular

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Army except the Royal Engineers. The age limits are twenty to twenty-five, and for the Indian Army twenty to twenty-four years. A candidate must—

1. Fulfil certain conditions as to residence during a course of study at the University.

2. Qualify for a degree in an approved subject.

3. Attend a course of military instruction at the University.

4. Be attached to a Regular unit.

5. Pass a qualifying examination in military subjects.

Professor T. Hudson Beare, Convener of the Military Committee of the University of Edinburgh, remarks: "There is a growing demand for Army Officers of wide general education, such as may be obtained by an unfettered course at a Secondary School followed by a University training. There are many administrative positions open to a soldier in which a University education would be of great use to him, and such an education would form a mental, and at times, a material resource after he retires from active service. There are two cases in which this method of obtaining a commission may be recommended: (1) A boy's parents may have made up their minds as to his profession too late for him to enter the Army through Woolwich or Sandhurst; (2) in many cases parents may prefer that their boy should have a general education, instead of prematurely specializing, in an Army Class, in order that he may be fitted for other occupations in case he should, for any reason, decide ultimately against going into the Army. In these cases it is well that both parents and boys should know that there is this method of obtaining a commission."

Under the University scheme a boy would complete the school curriculum at the age of eighteen or nineteen,

THE ARMY [ROYAL RESERVE ENGINEERS

would enjoy a University training up to an Arts or Science degree, and on graduating would simultaneously obtain a commission in the Cavalry, Artillery, Infantry, or Indian Army. The age at which a commission is obtained in this way at the Scotch Universities (where men enter at an early age) is practically the same as that at which it is usually obtainable through Woolwich or Sandhurst. At Oxford and Cambridge men do not usually enter until nineteen; this would mean that a commission could not be obtained before twenty-two; but the advantages of a career at Oxford or Cambridge would be well worth the delay. Moreover, a degree with First Class Honours gives an additional six months' antedate to the commission in addition to the eighteen months' antedate given to nominated candidates.

See Appendix A (p. 55) for fuller details regarding University candidates.

ROYAL RESERVE ENGINEERS.—The Institution of Civil Engineers has the privilege of submitting every half-year the names of gentlemen recommended by the President of the Institution to be granted commissions in the Royal Reserve Engineers, which is a Special Reserve supplementary to the Corps of Royal Engineers. The numbers so nominated average fifteen each half-year.

Applicants for commissions as Second Lieutenants "on probation" in the Royal Reserve Engineers must be between eighteen and twenty-five, and, save under exceptional circumstances, are required to have passed the Associate Membership Examination of the Institution, or to have taken a degree in Engineering at a recognized University. The probationary training lasts for one year, after which the officer is confirmed in his appointment if

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certified to be in all respects competent to carry out the duties of his rank.

PROMOTION FROM THE RANKS.—It may at first be thought that this avenue, owing to the small number of commissions obtained by it, is hardly worth consideration. There are, however, at the present time 1,500 officers in the Army holding the King's Commission who enlisted as private soldiers, and as many as fifty such promotions occur every year. It must be borne in mind that these figures include a large number of Quartermasters, Riding Masters, and District Officers, R.A., and that in the case of the Royal Artillery and the Royal Engineers a commission can only be secured through the intermediate stage of the Warrant rank.

It is practically certain that the trend of events in the Army will make promotion from the ranks more frequent in the future than it has been in the past. It is an avenue for an earnest, intelligent, determined youth, who has either had hard luck in examinations, or cannot afford the expenses of Woolwich or Sandhurst, and yet is devoted to the profession of arms. It is a chance worth the risk, if he is prepared, in the event of a commission never coming, to serve happily in the ranks. That possibilities, however, lie before him is illustrated by the case of Major-General Sir Luke O'Connor. Sir Luke's name will always be known as that of the "ranker" who rose to be Colonel of the regiment in which he enlisted, and subsequently to be Major-General. His services in the Crimea were of the most notable character, and gained for him the V.C. Following the Crimean campaign Sir Luke served through the Indian Mutiny and in the Ashanti War of 1873. His promotion was rapid, and eventually came the day which

THE ARMY [ENTERING THE ARMY

he himself has described as the proudest in his life—when he was appointed to command the regiment in which he enlisted as a young man.

For specially meritorious service, or for conspicuous gallantry in action, a soldier may at one bound win a commission, but, apart from these exceptional cases, a recommended candidate for promotion from the ranks must fulfil the conditions which are given in detail later on.

APPENDICES

APPENDIX A

METHODS OF ENTERING THE REGULAR ARMY

1. ROYAL MILITARY COLLEGE, SANDHURST.

NOTE.—For more detailed information see Regulations respecting Admission to the Royal Military College, which can be obtained through any bookseller, price 1d.

Methods of Entry. There are two methods of obtaining admission to the Royal Military College—

1. By successful competition at an Army Entrance Examination.

N.B.—The following enter without competition, provided they qualify in the obligatory subjects at an Army Entrance Examination (see p. 47):

King's Cadets.

Honorary King's Cadets (10 annually).

King's Indian Cadets (20 annually).

Honorary King's Indian Cadets (3 annually).

Pages of Honour.

2. On the nomination of the Army Council.

General Qualifications.—Candidates must be unmarried, and will not be accepted unless, in the opinion of the Army Council, in every way suitable to hold a commission.

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All successful and nominated candidates must pass a medical examination (see p. 48).

Age.—Candidates must have attained the age of seventeen and must not have attained the age of nineteen and a half (the half-year being reckoned by calendar months) on June 1 and December 1, respectively, for admission to the College at the commencement of the ensuing spring and autumn terms.

Candidates for the West India Regiment may compete if under twenty-one years of age on the above dates.

ARMY ENTRANCE EXAMINATION.

General Outline of the Army Entrance Examination.—The Army Entrance Examination is both qualifying and competitive—i.e., a candidate to be considered successful must obtain a qualifying minimum of marks in certain obligatory subjects, and must, in addition, gain a sufficiently high place on the list to entitle him to one of the Cadetships offered.

Dates.—June and November.

To Whom to Apply and Dates of Application.—On application by letter to the Secretary, Civil Service Commission, Burlington Gardens, London, W., a printed form of application will be sent to the candidate. This must be filled up in the candidate's own handwriting, and should be returned to the Secretary, Civil Service Commission, before April 1 or September 1.

(No form received after May 15 or October 15 will under any circumstances be accepted.)

The candidate will then receive from the Civil Service Commission: Form A and certain other forms which must be filled up and returned to the Secretary, Civil Service Commission.

If satisfactory, the Candidate will receive an order to attend the examination.

Certificates required.—The candidate, when called upon to do so, will be required to furnish the following:

1. An extract from the register of his birth; or, if this cannot be obtained, a certificate of his baptism or other documentary evidence, accompanied by a statutory declaration made by one of his parents or guardians before a magistrate giving the exact date of birth.
2. If the candidate holds a commission in the Special Reserve of Officers, Militia, or Territorial Force, a recommendation from the Commanding Officer of the regiment.

THE ARMY [ENTRANCE EXAMINATION

3. On Form A the names of two responsible referees (not tutors, relatives, or near connections), who, having known him during the four years previous to the examination, will furnish a certificate as to character.

On presenting himself for the examination the candidate must bring with him the order to attend the examination.

Subjects.

CLASS I.

	Marks.	
English	2,000	} Obligatory.
English History and Geography ...	2,000	
Mathematics A (Elementary) ...	2,000	
French or German	2,000	

CLASS II.

	Marks.	
German or French	2,000	} Optional.
Latin	2,000	
Greek	2,000	
Science (Physics and Chemistry) ...	2,000	
Mathematics B (Intermediate) ...	2,000	
Mathematics C (Higher)	2,000	

(For details and syllabus, see Appendix II. of the official Regulations.)

All subjects in Class I must be taken up, and a qualifying minimum of 33 per cent. of the maximum marks must be obtained in each. Only two of the subjects in Class II. may be taken up, and if one of these is a modern language, it must be different to the modern language selected in Class I.

In addition, Freehand Drawing, to which 400 marks are allotted, may be taken up.

Certificate A obtained in a unit of the Officers' Training Corps will entitle the holder to receive 200 marks (see Regulations for the Officers' Training Corps)

A candidate (other than a candidate for a Cavalry Cadetship, a Guards Cadetship, or for the West India Regiment) may, if eligible as regards age, compete for both the Royal Military College and the Royal Military Academy at the same examination, but must, if he does so, take up the subjects which are obligatory for the Royal Military Academy (see Royal Military Academy, p. 52). He will count for the Royal Military College his marks in English, English History and Geography, Mathematics A, and French or German, and in the best two of his three remaining subjects.

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Successful competitors enter the Royal Military College as Cavalry Cadets, Guards Cadets, Cadets on the General List, or Cadets for West India Regiment only.

Candidates for Cavalry Cadetships and Guards Cadetships, respectively, compete amongst themselves, and are classified on separate lists. Successful candidates on these lists are, on passing out of the Royal Military College, eligible for commissions in the British Cavalry and Foot Guards only, as the case may be. (For other Cavalry or Guards commissions see p 61.)

(To be eligible for a Guards Cadetship a candidate must be recommended by the Colonel of the regiment he wishes to join.)

Fee for Examination.—£2 for examination in London, £3 for examination at any other centre.

NOMINATION TO CADETSHIP BY THE ARMY COUNCIL.

Conditions.—A certain number of suitable candidates, recommended by the Headmasters of schools recognized for the purpose, are nominated to Cadetships by the Army Council each half-year. (For list of schools so approved see and the Monthly Army List.)

To be eligible for recommendation by the Headmaster a candidate must—

1. Have attended continuously for at least three years one or more approved schools, and remain in residence at the school until the end of the term immediately preceding the nomination.
2. Be within the prescribed limits of age.
3. Be an efficient member of the school contingent of the Officers' Training Corps.

Dates of Nomination.—January and August, for admission in the ensuing February and September, respectively.

MEDICAL EXAMINATION.

Place of Examination.—London, Edinburgh, or Dublin. (For conditions as to physical requirements, see Appendix I. of the official Regulations.)

Appeal Board.—Candidates pronounced unfit can come before an Appeal Board in London a few days later, on payment of a fee of four guineas.

The decision of the Appeal Board is final on each occasion, but candidates are not debarred from competing or offering themselves for

nomination on a subsequent occasion, should they desire to do so, and be eligible in other respects.

Preliminary Medical Examination.—A candidate may, *for his own information*, attend a Preliminary Medical Examination not more than two years before he competes. Application (with fee of two guineas) to be sent to the Secretary, War Office, London, S.W (see Section VI. of the official Regulations).

PRIZE CADETSHIPS.

A certain number of Prize Cadetships are awarded to successful competitors (other than candidates for commissions in the West India Regiment) in order of merit at each half-yearly Army Entrance Examination. Emoluments varying in value up to a maximum of £255 may be attached to a Prize Cadetship. (For full particulars see Section IV. of the official Regulations.)

KING'S CADETS, HONORARY KING'S CADETS, KING'S INDIAN CADETS, HONORARY KING'S INDIAN CADETS.

King's Cadets.—Are appointed by the Secretary of State for War, from sons of officers of the Army, Royal Navy, Royal Marines, and permanent military forces of the Overseas Dominions or irregular troops when acting with, or in support of, the regular forces in the field who have fallen in action, or have died of wounds received in action, or of disease contracted on service abroad, and who have left their families in reduced circumstances.

King's Cadets are granted an educational allowance of £40 a year, tenable between the ages of thirteen and seventeen, and are entitled to a free course of instruction at the Royal Military College. On appointment to a commission they are granted an outfit allowance of £65.

Candidates who, on account of their age, are unable to receive the educational allowance, though eligible in other respects to be nominated to King's Cadetships, are, after qualifying at an Army Entrance Examination, entitled to a free course of instruction at the Royal Military College.

Sons of officers who have retired by the sale of their commissions, or who have surrendered their half-pay, are ineligible for King's Cadetships.

Honorary King's Cadets.—Ten are nominated annually by the Secretary of State for War. Such Cadets are appointed from—

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- (a) The sons of officers of the British Army, Royal Navy, or Royal Marines, who have been killed in action, or who have died of wounds received in action within six months of such wounds having been received, or from illness brought on by fatigue, privation or exposure, incident to active operations in the field before an enemy, within six months after their having been first certified to be ill.
- (b) The sons of officers of the British Army, who have attained the brevet, substantive or relative rank of Major, and have performed long or distinguished service.

An Honorary King's Cadetship does not carry with it any pecuniary advantage, and no declaration as to the circumstances of the deceased officer's family is required.

Sons of officers who have retired by the sale of their commissions, or who have surrendered their half-pay, are ineligible for Honorary King's Cadetships.

King's Indian Cadets.—Are nominated by the Secretary of State for India in Council, under the provisions of 21 and 22 Vict., c. 106, and 23 and 24 Vict., c. 100, from sons of persons who have served in India in the Military or Civil Service of His Majesty, or of the East India Company.

NOTE.—*This does not apply to the sons of officers of British regiments who have served in India.*

Honorary King's Indian Cadets.—Three are nominated annually by the Secretary of State for India in Council. Such Cadets are appointed from—

- (a) The sons of officers of the Indian Army who have been killed in action or have died of wounds received in action within six months of such wounds having been received, or from illness brought on by fatigue, privation, or exposure, incident to active operations in the field before an enemy, within six months after their having been first certified to be ill.
- (b) The sons of officers of the Indian Army who have attained the brevet or substantive rank of Major or Lieut.-Colonel and have performed long and distinguished service.

Applications.—Applications for King's Cadetships and Honorary King's Cadetships should be addressed to the Secretary, War Office, if the candidate is a son of an officer of the Army; or to the Secretary to the Admiralty, if the candidate is a son of an

officer of the Royal Navy or Royal Marines. The application should be accompanied by an extract from the register of the candidate's birth.

Applications for King's Indian Cadetships and for Honorary King's Indian Cadetships should be addressed to the Military Secretary, India Office, London, S.W.

Qualifying Test.—King's Cadets, Honorary King's Cadets, King's Indian Cadets, Honorary King's Indian Cadets, and Pages of Honour, will be required, before admission to the Royal Military College, to qualify at an Army Entrance Examination—*i.e.*, obtain 33 per cent. in the four obligatory subjects of Class I. (see p. 47). This may be done at any time after the candidate has reached the age of sixteen and a half.

2. ROYAL MILITARY ACADEMY, WOOLWICH.

NOTE.—For more detailed information see Regulations respecting admission to the Royal Military Academy, Woolwich, which can be obtained through any bookseller, price 1d.

Method of Entry.—Admission to the Royal Military Academy can only be gained by successful competition at an Army Entrance Examination.

General Qualifications.—Candidates must be unmarried, and will not be accepted unless in the opinion of the Army Council, in every way suitable to hold a commission.

Age.—Candidates must have attained the age of sixteen and a half, and must not have attained the age of nineteen and a half (the half-year being reckoned by calendar months) on June 1 for the summer and on December 1 for the winter Army Entrance Examination.

ARMY ENTRANCE EXAMINATION.

General Outline of Army Entrance Examination.—Same as for the Royal Military College, *q.v.*

Dates.—Same as for the Royal Military College, *q.v.*

To Whom to Apply, and Dates of Application.—Same as for the Royal Military College, *q.v.*

Certificates required.—Same as for the Royal Military College, *q.v.*

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Subjects.	CLASS I.	Marks.
English	2,000
English History and Geography	...	2,000
Mathematics A (Elementary)	...	2,000
French or German	2,000
Science (Physics and Chemistry)	...	2,000
Mathematics B (Intermediate)	...	2,000

} Obligatory.

CLASS II.

German, French, Latin, or Greek	...	2,000
Mathematics C (Higher)	...	2,000

} Optional.

(For details and Syllabus see Appendix II. of the official Regulations.)

All subjects in Class I. must be taken up. Only one of the subjects in Class II. may be taken up, and if it is a modern language, it must be different to the modern language selected in Class I.

In addition, Freehand Drawing, to which 400 marks are allotted, may be taken up.

Certificate A obtained in the Officers' Training Corps will entitle the holder to receive two hundred marks (see Regulations for the Officers' Training Corps).

A candidate may, if eligible in respect of age, compete for both Royal Military Academy and Royal Military College at the same examination by taking up the subjects which are obligatory for the Royal Military Academy.

Fee for Examination.—Same as for the Royal Military College, *q.v.*

Medical Examination.—Same as for the Royal Military College, *q.v.* (see also the official Regulations).

Prize Cadetships.—A certain number of Prize Cadetships are awarded to successful competitors in order of merit at each half-yearly Army Entrance Examination. Emoluments varying in value up to a maximum of £255 may be attached to a Prize Cadetship. (For full particulars see Section IV. of the official Regulations.)

3. SPECIAL RESERVE OF OFFICERS, MILITIA, AND TERRITORIAL FORCE.

For more detailed information see Regulations under which Commissions in the Regular Army may be obtained by Officers of the Special Reserve of Officers, Malta Militia, Bermuda Militia, Channel Islands Militia, and Territorial Force, which can be obtained through any bookseller, price 1d.

THE ARMY [RESERVE OF OFFICERS]

Commissions in the Regular Army (except in the Royal Engineers) are awarded to officers of the Special Reserve of Officers, Malta, Bermuda, and Channel Islands Militia, and Territorial Force (1) who are successful candidates at a competitive examination, or (2) who, having been Pages of Honour, reach a qualifying standard in the competitive examination. Candidates must also pass a medical examination.

General Qualifications.—To be eligible to attend a competitive examination, a candidate must fulfil the following conditions :

(a) He must be unmarried, and will not be accepted unless, in the opinion of the Army Council, he is in all respects suitable to hold a commission in the Regular Army.

(b) He must attain the age of twenty and not attain the age of twenty-five on April 1 for a March examination, or on October 1 for an examination in that month.

(c) He must have qualified at an Army Entrance Examination or passed some other examination accepted in lieu thereof.

(d) He must serve for eighteen months in the branch of the Service to which he belongs.*

An officer of the Special Reserve of Officers must have completed his probationary training and been confirmed in his appointment.

An officer of the Irish Horse, Malta, Bermuda or Channel Islands Militia, or Territorial Force must have completed a period of attachment to a regular unit of the arm of the Service to which he belongs and have been satisfactorily reported upon.

In the case of Infantry the full period of attachment is six months, and in the case of other arms twelve months.*

(e) He must be recommended by his Commanding Officer.

(f) If a candidate for the Royal Artillery, he must be an officer of the Special Reserve Artillery, Militia Artillery, or Territorial Force Artillery.

(g) If a candidate for Royal Field Artillery, he must also have an equitation certificate.

An officer of the Artillery may, if eligible, compete as a candidate for the Royal Artillery, and also on the general list for other branches of the Service.

* Certificates A and B obtained in the Officers' Training Corps entitle a candidate to reductions in the period of total service and attachment mentioned above (see official Regulations).

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ARMY ENTRANCE EXAMINATION.

Dates.—Same as for Royal Military College, *q.v.*

To Whom to Apply and Date of Application.—Same as for Royal Military College, but see next paragraph.

Place.—London and such other centres as the Civil Service Commissioners may appoint.

A candidate who wishes to undergo the oral and practical parts of the examination elsewhere than in London must complete his application form and forward it so as to reach the Civil Service Commissioners by April 15 or September 15 as the case may be.

Subjects.—Candidates for the Royal Artillery, the obligatory subjects for the Royal Military Academy (see p. 52).

Candidates for other branches, the obligatory subjects for the Royal Military College (see p. 47). Mathematics B and Science may be taken up separately.

Fee for Examination.—£2 for examination in London, £3 elsewhere. For Royal Artillery candidates taking Mathematics B and Science (or one of those subjects only), the fee is £1 in London and £2 elsewhere.

Other Examinations accepted.—For list of University and other examinations accepted in lieu of the Army Entrance Examination see paragraph 10 of the official Regulations.

COMPETITIVE EXAMINATION AND PRACTICAL TEST.

Dates.—Commence on last Monday in March and second Monday in October, at Aldershot, Dublin, Edinburgh, London, and Portsmouth. (Malta and Bermuda for officers of the Militia of those Colonies.)

There is no fee for this examination.

To Whom to Apply and Dates of Application.—The candidate should apply to his Commanding Officer, who will obtain the prescribed form from the War Office (see Appendix IV. of the Regulations). The form must be completed and forwarded so as to reach the War Office before February 15 or August 15 as the case may be. Instructions as to the time and place of the examination will then be issued *direct* to the candidate.

Candidates may enter the competitive examination for

(a) Cavalry only.

(b) Royal Artillery.

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(c) General List for other branches of the Service (except in the Corps of Royal Engineers).

Candidates who enter under (a) will compete amongst themselves for the Cavalry commissions available. An officer of the Special Reserve Artillery, Militia Artillery, or Territorial Force Artillery, may, if eligible, compete under either (b) or (c), or under both.

The election made will be final, and cannot be changed after the examination has commenced.

COMPETITIVE EXAMINATION (WRITTEN).

Subjects.

	•	Marks.
1. Military History and Strategy (two papers) ...		1,000
2. Tactics (two papers)		1,500
3. Field Engineering (two papers)		1,000
4. Map Reading and Field Sketching (one paper)		500
5. Military Law (one paper)		250
6. Military Administration and Organization (one paper)		250

Qualifying minimum—4 of the marks in each paper, and 15 of the aggregate marks.

PRACTICAL TEST.

A candidate must also pass a practical test in Map Reading and Field Sketching.

Medical Examination.—Same as for the Royal Military College (see also the official Regulations).

4. UNIVERSITIES.

(INCLUDING UNIVERSITIES IN THE OVERSEAS DOMINIONS
AND CROWN COLONIES.)

NOTE.—For more detailed information see Regulations under which Commissions in the Army may be obtained by University Candidates, which can be obtained through any bookseller, price 1d.

General Qualifications.—A certain number of commissions in the Cavalry, Royal Artillery, Infantry, Army Service Corps and Indian Army are granted each half-year on the nomination of such Universities or groups of Universities as have established courses of military instruction approved by the Army Council.

CAREERS FOR OUR SONS

For a list of the Universities empowered to nominate candidates see the Regulations.

Nomination is made in January and July of each year.

A candidate must be :

(a) Unmarried.

(b) Suitable, in the opinion of the Army Council, to hold a commission.

(c) Able to produce a certificate of good character from the head of the University or College.

Age.—A candidate must have attained the age of twenty-one and must not have attained the age of twenty-five on January 15 for the winter nomination, or July 15 for the summer nomination.

(A candidate for appointment to the Indian Army must be between the ages of twenty-one and twenty-four on the dates named.)

Antedate.—The commissions of nominated candidates will be antedated eighteen months from the date in which their names appear in the *London Gazette*.

A candidate who has graduated with First or Second Class Honours may on the recommendation of the Nomination Board be granted such an additional antedate (not exceeding six months) as may be approved by the Army Council.

General Outline of Tests which must be passed.—A candidate must—

1. Fulfil certain conditions as to residence or presence during a certain course of study at the University.
2. Undergo a course of military instruction at the University, qualify at an examination in military subjects.
3. Be a member of the University contingent of the Officers' Training Corps.
4. Fulfil certain conditions as to attachment to a Regular unit of the Army.
5. Take a degree in an approved subject or group of subjects.
6. Pass a medical examination.

A candidate for the Royal Artillery must, in addition, show that he has reached a standard in mathematics and science equal to that required of a candidate for the Royal Military Academy in the obligatory subjects of the Army Entrance Examination.

Qualifying Examination and Other Details.—Information as to the University examinations which qualify for a degree, and other

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details peculiar to the University, may be obtained from the University calendars, or on application to the University authorities.

EXAMINATION IN MILITARY SUBJECTS.

Dates.—The written examinations commence on the last Tuesday in March, and the second Tuesday in October.

Practical tests in Map Reading are held at dates suitable to the University.

Subjects of Written Examination.

		Marks.
Group A ...	1. Military History and Strategy (two papers) ...	1,000
	2. Tactics (two papers) ...	1,500
Group B ...	3. Field Engineering (two papers)	1,000
	4. Map Reading and Field Sketching (one paper) ...	500
Group C ...	5. Military Administration and Organization (one paper) ...	250

Candidates who desire may take up the examination in three parts. For this purpose the subjects are divided into groups as shown.

To qualify, a candidate must, in addition to passing the practical test, obtain '4 in each paper of Groups A and B, and '5 in the aggregate of marks allotted to each Group (A, B, and C).

Where the three groups are taken together at one examination, a candidate may be considered to have qualified if he obtains '4 in each paper, and '5 of the aggregate of the whole examination.

A candidate who fails in one paper only of a group, but who obtains '5 in the aggregate of the remaining papers of the group, will be re-examined in that paper only.

A candidate who fails in more than one paper of a group, or in the aggregate of a group, will be re-examined in the whole of that group. (For other information see the Regulations.)

Medical Examination.—Same as for the Royal Military College, except that the Preliminary Examination may be attended within three years of the completion of the approved academic course (see also the Regulations).

Conditions as to Training with Regulars, Membership of the Officers' Training Corps, etc.—See paragraph 9 of the Regulations.

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5. FROM THE RANKS.

An Army Council instruction which is issued with the Royal Warrant states that recommendations for promotions to Second Lieutenancies in Cavalry, Infantry, and Army Service Corps, of warrant officers or non-commissioned officers will, except in the case of candidates who have performed specially meritorious service, or distinguished service in the field, be entertained only on the following conditions :

(a) The candidate for promotion must, before he is recommended—

- (1) Give six months' notice to his commanding officer of his intention to sit for the Qualifying Examination in (b) (1).
- (2) Not be of lower rank than unpaid Lance-Corporal or corresponding rank.
- (3) Have not less than three years' service.
- (4) Be not less than twenty-one years of age according to the age given on attestation.
- (5) Hold a first-class certificate of education, or possess the qualifications which are accepted in lieu thereof, as laid down in the Army School Regulations.

(b) The candidate must, when selected—

- (1) Have passed the examination in military subjects for candidates from the Special Reserve of Officers and the Territorial Force.
- (2) Be under twenty-six years of age on April 1 for the April examination, on November 1 for the November examination referred to in (1).
- (3) Have a clear regimental conduct sheet.
- (4) Be unmarried ; and
- (5) Be physically fit for a commission.

Medical Examination.—A certificate from a Medical Officer as to fitness for service at home and abroad must be attached to the recommendation of the Commanding Officer.

After the candidate's name has been approved by the Secretary of State, he must pass in subject (a), as laid down in the King's Regulations. He is then duly gazetted, and granted an outfit allowance of £100.

THE ARMY [SANDHURST COURSE COURSE AT THE MILITARY EDUCATIONAL ESTABLISHMENTS, PAYMENTS BY PARENTS, ETC.

1. ROYAL MILITARY COLLEGE, SANDHURST.

(See Regulations respecting Admission to the Royal Military College.)

General Notes as to Joining the College, Notification, etc.—

After the competitive examination the Civil Service Commissioners publish in the principal newspapers a list of the successful candidates and their marks. They also inform each candidate of the result of the examination.

The successful candidates are then notified by the War Office of the time and place at which they are to appear before a Medical Board.

Those who are pronounced “unfit” have the opportunity of presenting themselves before the Appeal Board. Those finally rejected are notified that their names have been removed from the list of successful candidates. (They can, if they wish, and are still eligible as regards age, etc., compete again at a subsequent Army Entrance Examination. If again successful, their acceptance depends upon the report of the Medical Board which then examines them.)

Those who are found “fit” receive orders from the War Office to join the Royal Military College on a certain date.

After this, all further instructions are issued in due course by the Commandant, Royal Military College.

Contributions made by Parents or Guardians.—The annual contribution made by the parent or guardian depends on the position which the father holds, or held prior to his decease, and varies from “nil” in the case of a King’s Cadet to £150 in the case of the son of a private gentleman, or of an officer retired from the Army or Navy who does not come under any of the categories mentioned in the Pay Warrant, and quoted in Regulations respecting admission to the Royal Military College. (For details see the Regulations, Sections IV. and IX.)

In addition to the regular contribution, each Cadet, other than King’s Cadets, certain King’s India Cadets and Prize Cadets, has to pay £35 on joining and £15 at the commencement of a third term, towards covering the expenses of uniforms, books, etc.

Allowance.—An allowance of 8s. a day is credited to each Cadet in aid of messing and other expenses.

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Length of Course.—The normal length of the course is two years (four terms), but has been temporarily reduced to 1½ years (three terms). Cadets may, however, be passed out after two, three, or four terms, as required by the exigencies of the Service.

Examinations, Marks, Failures, etc.—Examinations are held at the end of each term, and a Cadet must qualify in order to be promoted into a higher division.

A Cadet who fails once loses a term. *A Cadet who fails twice is removed from the College.*

A Cadet's place on the passing-out list is determined by the total marks obtained at examinations, and for term work during the whole course.

2. ROYAL MILITARY ACADEMY, WOOLWICH.

(See Regulations respecting Admission to the Royal Military Academy.)

General Notes as to Joining the Academy, Notification, etc.—Same as for the Royal Military College, except that the further instructions are issued by the Commandant, Royal Military Academy.

Contributions made by Parents or Guardians.—Same as for the Royal Military College (see p. 59).

Allowance.—Same as for the Royal Military College (see p. 59).

Length of Course.—The normal length of the course is two years (four terms).

Examinations, Marks, Failures, etc.—Same as for Royal Military College (see above).

3. SPECIAL RESERVE OF OFFICERS, MILITIA, AND TERRITORIAL FORCE.

(See Regulations for Officers of the Special Reserve of Officers and for the Special Reserve and Regulations for the Territorial Force and for County Associations.)

(i.) Special Reserve of Officers.

The Short Guide to obtaining a commission in the Special Reserve of Officers contains information as to steps to be taken,

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qualifications necessary, rates of pay, training, liability to service, etc. Full details are given in the Regulations for the Special Reserve.

(ii.) *Militia.*

Reference should be made to the Regulations respecting the Malta, the Bermuda, or the Channel Islands Militia, for particulars of the conditions which govern first appointment to a commission therein.

(iii.) *Territorial Force.*

The pamphlet entitled *How to Obtain a Commission in the Territorial Force and Territorial Force Reserve*, contains information as to steps to be taken, qualifications necessary, training, etc. Full details are given in the Regulations for the Territorial Force.

FIRST APPOINTMENT

(A) Notes as to Choice of a Regiment on First Appointment.—After passing out of the College appointments are made on the following principles :

1. ROYAL MILITARY COLLEGE CADETS.

CAVALRY AND GUARDS.

Selection is made on the conclusion of the course at the College as follows :

1. Cavalry Cadets will be appointed to commissions in the British Cavalry only, and Guards Cadets to commissions in Foot Guards only.
2. After the claims of Cavalry and Guards Cadets have been satisfied, appointments to vacancies remaining in the British Cavalry and regiments of Foot Guards, respectively, will be allotted in order of merit to successful candidates at the Final Examinations who are eligible for and desirous of such appointments.

INFANTRY.

1. A cadet having special family or territorial connection with a regiment may, before the Final Examination, apply through the Commandant to the Military Secretary to be appointed to that regiment. Such consideration as can be afforded will be given to his request.

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2. If desirous of waiting for this regiment, he must state this in making the application, but—

- (a) He will only be allowed to wait if his claim is a very strong one.
- (b) The period for which he may wait will in no case exceed six months, but may be determined at any time if the needs of the Service so require.
- (c) After being once gazetted no application for a transfer will be considered.

3. A candidate without special claims will be allowed to apply for particular regiments (not exceeding three in all), but will not be allowed to wait.

4. When the claims of candidates are evenly balanced, *first consideration will be given to those highest in order of merit at the Final Examination.*

5. Though a candidate's wishes will be met as far as possible, he must understand that he will be posted as demanded by the interests of the Service.

INDIAN ARMY.

Such vacancies as remain over after the King's Cadets, King's Indian Cadets, and Hon. King's Indian Cadets have been posted, are allotted *in order of merit at the Final Examination.*

A Cadet is gazetted as Second Lieutenant on the Unattached List, and is sent to India to be attached for a year's probation to a British unit. Before leaving the Royal Military College he is allowed to state which British unit he would prefer to serve with, and his wishes are met as far as possible.

His appointment, after the probationary year, to a particular Native regiment rests with the Commander-in-Chief in India, who considers applications on this point.

2. ROYAL MILITARY ACADEMY CADETS.

The choice of corps (Royal Artillery or Royal Engineers), as far as vacancies permit, is offered to those who pass out *highest in order of merit at the Final Examination.*

Cadets recommended for commissions in the Royal Artillery will be given an opportunity to state which branch of the regiment—*i.e.*, Royal Field Artillery or Royal Garrison Artillery—they desire to join.

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But in making selections for the Royal Field Artillery, preference will be given to the Cadets who obtain the highest marks in Riding, Horsemastership, and Field Artillery drills.

3. CANDIDATES FROM THE SPECIAL RESERVE OF OFFICERS, MILITIA, TERRITORIAL FORCE, UNIVERSITIES, AND OVERSEAS MILITARY FORCES.

Candidates are appointed to the various branches of the Service (except to the corps of Royal Engineers), and are, as far as possible, given choice of corps under similar rules to those for candidates from the Royal Military College or Royal Military Academy. Each successful candidate is furnished with a form on which to state his wishes and claims for consideration.

Where claims are evenly balanced, preference will be given to those candidates who pass highest in the examination in military subjects.

(B) Notes on how the Information of Appointment and Orders to Join are conveyed, and Notes on Outfit.—After leaving the College or Academy, or after nomination by a University, or after passing the competitive examination in military subjects, candidates are in due course gazetted as vacancies occur.

On the same day that the officer's name appears in the *Gazette*, a letter is sent him by the Military Secretary informing him of his appointment, drawing attention to the article in the Pay Warrant, in which he is warned that he will not be retained in the Army unless during the first three years of his service his retention is shown to be desirable. He also receives instructions as to uniform, camp kit, etc., and is recommended to apply to the officer commanding the regimental dépôt for advice as to what articles he will require.

An Infantry officer is directed to apply to the Secretary, War Office, if he desires to join a particular battalion.

He next receives a printed letter from the Adjutant-General ordering him to join his regiment, battery, or battalion on a certain date if it is at a home station, or to be in readiness to embark on a certain date if the unit is abroad. He is directed in this letter to communicate his present address and any change of address to the Regimental Agents (these can be found in the Army List), and to acknowledge receipt by returning a printed form attached to the letter. (If appointed to a unit at home he is usually given a month before joining, and if abroad two months.)

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If going to a unit abroad, he next receives from the Quarter-master-General an order to embark, with full particulars as to date, ship, etc.

OUTFIT.

Before buying uniform, sword, regimental ornaments, etc., the officer should write either to the Adjutant of his unit if at home, or to the Adjutant at the regimental depot, and ask for information.

He can also see patterns of camp kit, etc., in the pattern-room at the War Office.

Officers' regulation equipment, if an article of store, such as revolver, field-glasses, compass, sketching material, saddlery, etc., can be obtained at Government price on payment from the Ordnance Department. Application to purchase in this way must be made through the Adjutant of the regiment (see Equipment Regulations, Part I.).

Officers who wish to purchase more expensive field-glasses than the regulation pattern can see various kinds which are recommended by the War Office by applying to the Chief Inspector, Woolwich.

FOR THE INDIAN ARMY.—Particulars as to the uniform of officers appointed to the Unattached List for the Indian Army can be obtained from the Secretary, War Office, London, S.W.

CHARGERS.

Officers of the Cavalry and Royal Horse Artillery are supplied with two chargers, and other mounted officers are supplied with one charger at the public expense.

If they desire to use them for other than military purposes, they may do so on payment of £10 a year each.

APPENDIX B

HOW TO OBTAIN A COMMISSION IN THE SPECIAL RESERVE OF OFFICERS, WITH INFORMATION AS TO CONDITIONS OF SERVICE, ETC.

Candidates desirous of obtaining commissions in the Special Reserve of Officers, who do not know what steps they should take, nor to whom to apply for information, are referred to the Regula-

tions for the Special Reserve. Any necessary amendments of the Regulations are notified in Army Orders, which are sent to the Press for publication.

All correspondence sent to the War Office should be addressed to The Secretary, War Office, London, S.W., and not to any department or to any officer by name.

1. Objects of the Special Reserve of Officers.—The Special Reserve of Officers is designed to provide—

- (a) Such numbers of trained or partially trained officers as will, on mobilization, complete the junior ranks of all units, services, and departments of the Regular Army, and make good the wastage of war.
- (b) Officers of all ranks up to and including Lieutenant-Colonel, for units of the Special Reserve.

2. Reserve Units.—The units to be provided for under (b) are almost exclusively Infantry battalions (formerly Militia), of which there are 101.

Reserve units of other branches are—Two regiments of Irish Horse, two Royal Garrison Artillery units (Antrim and Cork), and two Royal Engineer units (Anglesey and Monmouthshire).

3. Liability to Annual Training and Active Service.—Officers undertake to attend annual or other training, and to serve, in a national emergency, in such branch of the Army as they have selected, and with which they have been trained. They are liable for active service on emergency necessitating the calling out of the Army Reserve. This liability holds good for one year (in the Royal Engineers three years) from completion of the probationary period, and unless notice that an officer wishes to resign be given at least one month before the end of this period, he remains subject to the liability for a further period of one year, and so on from year to year.

4. Conditions no Hindrance to Civil Profession in Peace Time.—It will be seen from the following paragraphs that the conditions of service and the duties of a Special Reserve Officer need not, in peace time, hinder a young man in his civil profession, nor involve him in expense. In war he may at any time be called upon to command regular troops, and to fight side by side with the Regular officers with whom he has performed his training in peace time.

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5. **Eligibility for Appointment to the Regular Army.**—An officer of the Special Reserve (except Army Service Corps, Royal Army Medical Corps, or Army Veterinary Corps) may compete for a commission in the Cavalry, Foot Guards, Infantry, or Army Service Corps of the Regular Army. An officer of the Royal Artillery of the Special Reserve may also compete for a commission in the Royal Artillery of the Regular Army (see the Regulations under which Commissions in the Regular Army may be obtained by Officers of the Special Reserve, etc.).

An officer of the Royal Army Medical Corps of the Special Reserve may compete for a commission in the R.A.M.C. of the Regular Army (see the Regulations for Admission to the Royal Army Medical Corps.)

6. When called out for Army service at a time of national emergency, a subaltern not over twenty-five years of age (in the Royal Army Medical Corps thirty, and in the Army Veterinary Corps twenty-seven years), and a Captain not over thirty-five (in the Royal Army Medical Corps or Army Veterinary Corps forty years), will be eligible under certain conditions to be appointed to commissions in the Regular Army in their respective ranks.

APPENDIX C

HOW TO OBTAIN A COMMISSION IN THE TERRITORIAL FORCE

GENERAL.

1. The Territorial Force was established in 1908 in order to create and maintain a complete and efficient Home Army for the defence of the British Isles, the troops drawn from each county being recruited, and, in time of peace, administered by their own County Association but trained under the local General Officers Commanding-in-Chief

2. The active portion of the Force consists of an establishment of about 11,000 officers and 302,000 non-commissioned officers and men. It is divided into the following arms: Yeomanry, Horse Artillery, Field Artillery, Garrison Artillery, Engineers, Infantry with Supplies and Transport, Medical, and Veterinary services in due proportion. It will be supported by a Reserve of about 33 per cent. of its establishment.

4. The success of the Territorial Force is at present largely

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dependent upon the patriotism and willingness of a sufficient number of men in Great Britain to undergo the necessary training to enable them to defend their country.

5. The detailed rules governing the Force will be found in the Regulations for the Territorial Force and for County Associations; and in the Monthly Army List will be found (1) a list of the various corps (or units) composing the Force, (2) another list showing the various units which are administered by the several County Associations, and (3) the names and ranks of the officers belonging to these units. Both of these books can be obtained through any bookseller.

5(a). On the occurrence of imminent national danger, or of a great emergency, during which all the Regular Army Reserves are called up, the whole of the Territorial Force (including its Reserve) is liable to be mobilized for permanent embodiment.

APPLICATION FOR COMMISSIONS.

6. Candidates for commissions in the Territorial Force must be British subjects not under seventeen years of age, and must be domiciled in the United Kingdom.

7. Applications for appointment should be addressed to the Secretary of the Territorial Force Association for the County which administers the unit in which a candidate desires to serve. The addresses of the various Secretaries of County Associations will be found in the Monthly Army List.

8. Army Form E 536 will then be forwarded to the candidate to be filled up and returned to the Secretary of the County Association, who will take the necessary action, in conjunction with the military authorities, to submit the candidate's name to the War Office.

9. Intending candidates who require further information can obtain it from the Commanding Officer or Adjutant of any local Territorial Force unit.

REQUIREMENTS FROM AN OFFICER OF THE TERRITORIAL FORCE.

10. No military examination is required of any candidate before being appointed. An officer who, on first appointment to the Territorial Force, is commissioned to a rank higher than that of Second Lieutenant, is required to qualify for the rank to which

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he is appointed within twelve months from the date of *Gazette*, unless he has previously qualified for that rank in the corresponding branch of the Regular Army, Special Reserve, Militia, Imperial Yeomanry, or Volunteers.

10(a). An officer is required to fulfil certain conditions in order to qualify for the outfit grant.

11. An officer is required annually to attend, according to his branch of the Service, (a) a certain number of drills, (b) the training in camp of his unit, and (c) a course of musketry. (For particulars of these annual training requirements, see official *Guide for Candidates for Commissions in the Territorial Force*.)

11(a). If an officer has previously served in the Officers' Training Corps, he may, at the discretion of his Commanding Officer, be excused all or part of his drills during the first year of his service.

12. A "drill" consists of one hour's actual instruction, but not more than three may be performed in any one day. Drills are arranged for by the Commanding Officer at such times and places as are found most convenient to local circumstances. Special voluntary courses of instruction may be attended by officers who desire to do so. A complete list of these courses is contained in Appendix VI. of the Territorial Force Regulations. The training year ends on October 31.

III

THE NAVY .

They left us a kingdom none can take,
The realm of the circling sea,
To be ruled by the rightful sons of Blake
And the Rodneys yet to be.

HENRY NEWBOLT.

WITH the splendid record of our great sailors to look back upon, what wonder that so many of our sons are fired with enthusiasm for the glorious life of the sea! And though times have changed, and with them the outward manifestations of sea-power, yet the spirit which accomplished the deeds of dogged daring in the past is still the same, and the British Empire to-day has need of worthy successors to Hawkins and Howard, Drake and Blake, Grenville and Hawke, Rodney and Nelson.

To a youngster who is sound in wind and limb, who has strong within him a love of adventure, who is ready to take trouble, and is not afraid of roughing it, the Royal Navy offers a career at once attractive and meritorious. In this great service it is the man of action who achieves fame and success; cheerful, resourceful, resolute, and master of himself; no calling this for the poet and scholar, yet for intellect, too, there is room and rich reward.

But let there be no misunderstanding as to the rewards.

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A healthy, active life, with few anxieties and the highest social privileges, are conditions of life which many a wealthy man may well envy, though wealth and the power it brings do not fall to the lot of the Naval Officer dependent on his pay, ample though it be for the comforts and even some of the luxuries of life.

As compared with the Army, the expenses of preparation for the Navy (amounting in the normal case to not more than £750, and in special cases to less than £600) are lighter, and the pay is better; and in the healthy discipline of the gun-room the midshipman has few temptations to extravagance.

QUALIFICATIONS.—But the very first consideration is that of physical soundness, and the requirements of the Navy in this respect are very exacting. A weak constitution, eruptions of the skin, defective teeth, stammering, imperfect sight or hearing, varicose veins, or malformation of any limb will mean rejection at the hands of the Naval Medical Officers. The Admiralty have, however, devised a system of appeal in case a parent is dissatisfied with the result of the official medical examination, details of which are given below.

TRAINING.—All Officers for the Executive and Engineer Branches of the Royal Navy or for the Royal Marines are now entered as Naval Cadets under identical conditions, between the ages of about thirteen and a half to fourteen, and are educated and trained together until passing as Sub-Lieutenants at the age of nineteen to twenty. It is necessary to apply to the Admiralty soon after a prospective candidate has reached *the age of twelve and a half years*. (Normal Course of Training continued on p. 75.)

Royal Marines.—At the present time (1914) Officers for

the Marines still take the Entrance Examination for Sandhurst, followed by a special course at Greenwich. Appointments as Probationary Second Lieutenants in the Royal Marines are offered annually to candidates who may successfully pass a competitive examination and be otherwise duly qualified.

ENTRANCE EXAMINATION.—The examination is held in June, and candidates must apply to the Secretary of the Admiralty not later than April 1 each year.

Age Limits.—Seventeen to nineteen years. Candidates are separately interviewed before being admitted to compete. They must be of pure European descent, the son of either natural born parents or parents naturalized in the United Kingdom; must produce certificates of birth and of ability to swim; and are also required to undergo a medical examination for general physical fitness. The physical requirements are precisely the same as for candidates for the Royal Navy, except that candidates must be at least 5 feet 5 inches in height. Parents or guardians are required to make an Officer a private allowance of at least £60 a year until his pay amounts to 7s. 6d. a day (*i.e.*, for about three years), and afterwards of £45 a year until he is in receipt of 10s. a day (*i.e.*, during an additional period of from one to two years).

The subjects of examination are as follows :

(1) English. (2) English History and Geography. (3) French or German or Latin. (4) Mathematics A (Elementary). (5) Mathematics B (Intermediate). (6) Science (Physics and Chemistry). (7) Mathematics C (Higher).

Two thousand marks are allotted to each subject. The first six subjects in the above list are compulsory, but (7) "Mathematics C" is optional. Candidates may also take up Freehand Drawing, to which 400 marks are allotted. Certificate A, obtained in the Officers' Training Corps, will entitle the holder to receive 200 marks

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in addition to the above. No candidate will be accepted who does not (1) show a competent knowledge of Mathematics in the elementary and intermediate stages, and (2) obtain a satisfactory aggregate in the examination.

The pay of Royal Marine Officers is as follows :

Probationary Second Lieutenant—

On entry, 3s. per diem.

After completing the Greenwich Course, 5s. per diem.

After two years (subject to passing in practical naval subjects), 6s. per diem.

Lieutenant, from 7s. 6d. to 11s. per diem.

Captain, from 12s. to 15s. per diem.

Major, from 20s. to 26s. per diem.

Lieutenant-Colonel, from 30s. to 36s. per diem.

Colonel-Commandant, Colonel's pay with extra 5s. or 12s. per diem.

“Special Entry.”—Owing to the great increase in the Navy, and the unprecedented demand for Officers, which had not been foreseen when the new scheme was initiated, the Admiralty have instituted a temporary “Special Entry” of Naval Cadets at the age of seventeen and a half to eighteen and a half. But it is announced that only a limited number of such Cadets will be selected during 1914–1916.

The training of the Cadets at Osborne has largely a scientific and engineering element, which not only fits the young Officer for service in the engine-room, but enables him to acquire an amount of mechanical science which will prepare him, if necessary, to deal with the mechanical and electrical appliances of the modern warship. With a view, therefore, that Officers entered under the new scheme shall eventually have, as far as possible, similar qualifications,

the Entrance Examination has been arranged in such a manner as to attract candidates who have received at school a good grounding in mathematics, mechanics, and physics.

The subjects of examination will be nearly identical with those set for entrance into Woolwich, and the same papers will be used; but weight will be assigned to an elementary knowledge of engineering science in addition to the usual Woolwich subjects. After admission, the course of training will largely consist of practical instruction on naval engineering and the applications of electricity to the needs of the Service.

SPECIAL ENTRANCE EXAMINATION.

The first special examination under the new conditions will take place in June, 1914, and intending candidates should send in their names to the Secretary of the Admiralty, Whitehall, S.W., to reach him on or before April 30 next. The *age limits* are from seventeen and a half to eighteen and a half years.

An Admiralty Committee will interview each candidate and examine credentials furnished by the Headmaster of the School he is attending, or last attended. A report will be obtained beforehand from the Headmaster for the information of the Committee as to the candidate's conduct, abilities, past training, and general promise of suitability. On the report of this Committee it will be determined whether the candidate shall be admitted to compete. Candidates must also pass the usual medical tests.

The subjects of examination will be as follows (2,000 marks allotted to each):

(1) English. (2) English History and Geography. (3) French or German or Latin. (4) Mathematics—Elementary, Intermediate, Higher (optional). (5) Science (Physics and Chemistry). (6) Elementary Engineering (optional).

Both papers marked optional may be taken. Candidates will not be excluded who do not take the papers marked optional, but no candidate will be accepted who does not show a competent knowledge of Mathematics, as well as obtain a satisfactory aggregate in the examination.

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Certificate A obtained in the Officers' Training Corps will entitle the holder to an addition of 200 marks.

The paper on Elementary Engineering will comprise questions of a very elementary character, and no knowledge of workshop practice will be required.

Successful candidates at this Special Entry will be appointed as Cadets to undergo a course of training for a period of one and a half years. During this period they will be accommodated on board a cruiser, part of the instruction being given on board and part on shore.

On completing this course, and passing out satisfactorily, they will join the fleet as Midshipmen. They will become Midshipmen later in age than Cadets who enter through Osborne, but their services in that rank will be shorter, with the general result that, except for the effect of the accelerated promotion which they may obtain by doing well in their final examinations, their age will usually be about a year more on attaining the rank of Lieutenant. This will be no bar to their advancement according to merit. The same subsequent career will be open to them as to Officers who have entered the Navy through Osborne and Dartmouth.

Parents or guardians are required to make a private allowance of £50 per annum to Cadets from the time they join the Naval Service until they reach the rank of Acting Sub-Lieutenant (namely, for a period of about three years and four months), and thereafter a private allowance at the rate of £20 a year for the period (usually not exceeding two months) that they remain Acting Sub-Lieutenants with pay at the rate of 3s. 6d. a day before becoming Sub-Lieutenants. On reaching the rank of Sub-Lieutenant an Officer is required to provide himself with the uniform of a Commissioned Officer.

Cadets will be paid 1s. a day from the time of entry

THE NAVY [OSBORNE AND DARTMOUTH

until they become Midshipmen, when their pay will become 1s. 9d. a day. On reaching the rank of Sub-Lieutenant an Officer will be paid 5s. a day. The commencing rate of pay of a Lieutenant, reached after at most two years as Sub-Lieutenant, is 10s. a day.

A Sub-Lieutenant can meet his mess and other necessary expenditure on the pay of 5s. a day.

AT OSBORNE AND DARTMOUTH.—At the close of 1902 a memorandum was published by the Admiralty indicating great changes in the Regulations which govern the entry and training of Naval Cadets. This new scheme came into force in 1904, when the Royal Naval College at Osborne was started. Cadets now spend two years at Osborne and two years at Dartmouth in a magnificent new college, built to replace the *Britannia*, which was formerly the training-ship for Naval Cadets. Owing, however, to the raising of the age of entry, these two-year periods will in all probability be shortly reduced to five terms each.

It will be seen from the Regulations below that the method of selecting Cadets is *not competitive*, but that all are subjected to a qualifying examination.

The Interview Committee usually consists of an Admiral, the Headmaster of some well-known school, a Naval Captain, and one of the Secretaries to the First Lord. Confidential reports are called for from the heads of the preparatory schools from which candidates have come, and upon these and the impression produced by fifteen to twenty minutes general talk with each candidate the Committee draws up a list in which all candidates are graded. In the past the Committee are said to have been wonderfully unanimous in their judgment of each case. Those candidates who

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are selected by the First Lord from the list submitted by the Interview Committee, are then subjected to a qualifying examination conducted by the Oxford and Cambridge Joint Examination Board. This is to test the ability of the selected candidates to profit by the Osborne-Dartmouth course, and is not competitive.

The following Regulations (dated September, 1913) are those which concern parents in considering the possibility of the Navy as a career. The remaining Regulations deal with the details of the training itself.

EXAMINATION REGULATIONS.

These Regulations apply to Cadets entering after September, 1913.

1. No nomination is required by a candidate for a Naval Cadetship. All that is necessary is to send an application to the Assistant Private Secretary to the First Lord of the Admiralty. Applications should not be made until the candidate has reached twelve and a half years of age.

2. Candidates must be of pure European descent, and the sons either of natural born or naturalized British subjects. In doubtful cases the burden of clear proof will rest upon the parents or guardians of candidates.

3. All Naval Cadets entered under these Regulations are trained together until they pass for the rank of Lieutenant.

After passing for the rank of Lieutenant they may be required to serve either as general service Officers or in one of the special branches, undertaking either Engineering, Gunnery, Torpedo, Navigation, or Marine duty.

As far as possible Officers selected for special service will be allowed to choose the branch in which they will qualify, subject to the proviso that all branches are satisfactorily filled.

Parents or guardians of candidates for appointment as Naval Cadets must undertake for them that they are prepared to serve in any branch if required.

4. Parents or guardians are required to declare in writing their intention that the candidate, if he obtains a Cadetship, shall adopt

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the Navy as his profession in life; and it is subject to this undertaking that candidates are selected for Cadetships. Every Cadet who enters the Royal Naval College must therefore be prepared to continue his training so long as the Admiralty are satisfied with his progress, and parents are not at liberty to withdraw their sons at will.

On the entry of a Cadet parents or guardians will be required to undertake that, in the event of his withdrawing or being withdrawn from the College or from the Navy before being confirmed as a Sub-Lieutenant, they will pay to the Admiralty, if demanded, the sum of £25 per term in respect of each term passed by him at the Royal Naval Colleges, Osborne and Dartmouth, from the date of his entry to the date of his withdrawal, as a contribution towards the balance of the cost of his training and maintenance not covered by the annual payment of £75 mentioned in paragraph 15.

This undertaking does not apply to Cadets withdrawn at the request of the Admiralty.

5. Entries take place three times a year, in January, May, and September.

Candidates for entry in January must be more than thirteen years and four months, but not more than thirteen years and eight months of age on the preceding December 1.

Candidates for entry in May must be more than thirteen years and four months, but not more than thirteen years and eight months of age on the preceding April 1.

Candidates for entry in September must be more than thirteen years and four months, but not more than thirteen years and eight months of age on the preceding August 1.

If birthday falls in—	Application should be made before—	In order to be eligible for entry in the following—
April, May, June, July August, September, October, November December, January, February, March	September 30 January 31 May 31	January May September

6. All candidates (except those being educated in the Colonies, who have received special Colonial recommendations under para-

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graph 10) will be required to present themselves before a Committee, which will interview each applicant separately.

The applications must be received at the Admiralty—

For the January examination before October 1.

For the May examination before January 1.

For the September examination before May 1.

Appointments to Naval Cadetships are made by the First Lord from among candidates recommended by the Committee, and all such appointments are subject to the candidate passing a Medical Examination (see paragraph 8) and a Qualifying Examination in educational subjects (see paragraph 9).

The fact, however, of a candidate being invited to appear before this Committee is not to be understood as in any degree implying that he will necessarily be chosen to attend the Qualifying Examination.

The Interview Committee will sit shortly before the date fixed for each Qualifying Examination.

Candidates are eligible only for one Interview and Qualifying Examination.

7. The Qualifying Examinations are held in December, March, and July, and the appointments of successful candidates date from January 15, May 15, September 15, following respectively.

Should any case occur where a selected candidate is prevented by illness from attending the Qualifying Examination, the Admiralty will consider whether special arrangements can be made for him to be examined by the Headmaster of the Royal Naval College, Osborne, at the beginning of the ensuing term.

8. Every candidate must be in good health, and free from any physical defect of body, impediment of speech, defect of sight or hearing, and also from any predisposition to constitutional or hereditary disease, or weakness of any kind, and be in all respects well-developed and active in proportion to his age. Before undergoing the Qualifying Examination he is required to pass the medical examination according to the prescribed regulations, and must be found physically fit for the Navy.

It should be particularly noted that full normal vision—as determined by Snellen's tests—is required. A memorandum is issued by the Admiralty which gives details of the physical requirements of candidates.

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QUALIFYING EXAMINATION.

9. The Qualifying Examination* is in the following subjects :

- (1) English (including writing from dictation and reproduction of the gist of a short passage twice read aloud to the candidates).
- (2) History and Geography, with special reference to the British Empire.
- (3) Arithmetic and Algebra (two-thirds of the questions in this paper will be on Arithmetic. The use of algebraic symbols and processes will be allowed).

Arithmetic.—The simple and compound rules, avoirdupois weight, linear and square and cubic measures, the elementary mensuration of rectangular surfaces and volumes, measure of capacity (pints, quarts, gallons), the metric system (the metre, gramme, and litre, with their multiples and sub-multiples), money (including the relationship of the cent to the dollar, and the centime to the franc), reduction, factors, the addition, subtraction, multiplication, division, and simplification of vulgar fractions, and non-recurring decimal fractions, simple proportion, ratio and percentage, simple interest.

Algebra.—The meaning of algebraical symbols, substitution of values, easy identities, equations of the first degree, including simultaneous equations, verification of the solution of equations, problems leading to simple equations, multiplication and division by binomial operator, easy factors (excluding sum and difference of cubes), fractions with numerical denominators.

- (4) Geometry. The paper will consist of questions both on Practical and on Theoretical Geometry.

All candidates must be provided with a ruler graduated in inches and tenths, and also in centimetres and milli-

* Copies of the papers set at the examinations held in each year are printed by the Oxford and Cambridge Schools Examination Board, and may be obtained on application to the Secretary of the Admiralty, free of charge. It should be noted, however, that the questions in papers set under these Regulations will be slightly more advanced than those set prior to September, 1913, in consequence of the age of entry being raised.

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metres, a small set square, a protractor, pencil compasses, and a hard pencil.

Any proof of a proposition will be accepted which appears to the Examiner to form part of a systematic treatment of the subject. Simple deduction from specified theorems will be set.

Proofs of the validity of construction will not, as a rule, be expected, but they may be asked for.

The facts stated in the following theorems, together with riders on them, but without formal proofs of the theorem : B, 1-11.

Formal proofs of the following theorems, together with riders on them : B, 14-19, 21, 22.

NOTE.—Schedules of the Geometry are attached to the Regulations issued, and may be obtained on application to the Admiralty. The number in the Schedules correspond to those in the Geometry Schedule of the Common Examination for entrance to Public Schools, as reprinted from the Cambridge University Ordinances.

- (5) French or German, with an oral examination to which importance will be attached.
- (6) Latin (easy passages for translation from Latin into English and from English into Latin, and simple grammatical questions).

The list of successful candidates will be published in alphabetical order. A certain number of successful candidates who show excellence in the examination, and have also been highly recommended by the Interview Committee, will receive "Honourable Mention," and will be distinguished by an asterisk in the list of successful candidates.

10. The Governments of certain Dominions and Colonies are allowed to recommend specially (through the Secretary of State for the Colonies) a certain number of candidates annually from among boys belonging to families resident in the Dominions and Colonies.

Unless such candidates, however, actually reside and receive their education in their own Dominion or Colony, they must be also recommended by the Interview Committee, and must pass the Qualifying and Medical Examinations.

11. Naval Cadets will undergo a course of instruction in the

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training establishments for a period of four years, of which two years will be at Osborne and the remainder at Dartmouth.* On passing out of the College at Dartmouth they will continue their training for a period on board a Special Training Cruiser, and will then be sent to the sea-going Fleet as Midshipmen.

12. The following are the approximate dates for the beginning and the end of the three terms at the Colleges :

January 16 to April 15.

May 8 to August 6.

September 19 to December 17.

The vacations at the Colleges are as follows :

Four weeks at Christmas.

Three weeks at Easter.

Six weeks at Midsummer.

13. The friends of the Cadets must be prepared to receive them during all the vacations.

14. All Naval Cadets shall be subject to the Regulations for the time being in force respecting Cadets while at the Royal Naval Colleges at Osborne and Dartmouth, and on board the Training Cruisers.

15. For all Cadets entering under these Regulations, payment will be at the rate of £75 per annum for the period under training at the Colleges, to be paid in sums of £25 every term in advance to the Cashier of the Bank of England on receipt of claim from the Accountant-General of the Navy. But the Lords Commissioners of the Admiralty reserve the power of selecting from among the Cadets entered at each Examination, a limited number, being sons of Officers of the Navy, Army, or Marines, or of Civil Officers under the Board of Admiralty, with respect to whom the annual payment will be £40 only. In making this selection their Lordships will have regard solely to the pecuniary circumstances of the Cadet and his parents.

Application for the Reduced Scale must be received at the Admiralty :

For the January entry before October 1.

For the May entry before February 1.

For the September entry before June 1.

* This Regulation is shortly to be altered. In consequence of the higher age of entry, the period of training will probably consist of five terms at Osborne and five terms at Dartmouth.

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Claims will be made upon the parents, or guardians, by the Accountant-General of the Navy for the sums payable as they become due, and the money should be at once remitted.

16. In addition to the above payments, any expenses incurred by a Cadet for clothing, sports, books, instruments, washing, etc., as well as the allowance of 1s. a week paid as pocket-money, are included in the personal account sent to the parent from the College as soon as possible after the end of each term.

17. No pay is allowed by Government to the Cadets in the Colleges, except in the case of Cadet Captains, who receive a small weekly allowance.

The pay of Cadets in the Training Cruisers is 1s. a day, and that of Midshipmen 1s. 9d. a day.

18. The fees specified in paragraph 15 will cease on the Cadet joining the Training Cruiser. Parents or guardians will then be required to make the Cadet a private allowance of £50 a year until he reaches the rank of Acting Sub-Lieutenant, and thereafter a private allowance of £20 a year for so long as he remains an Acting Sub-Lieutenant with pay at the rate of 3s. 6d. a day.

19. The parent or guardian of every Cadet is required to provide outfit under the Regulations in force.

20. All travelling expenses for Cadets are advanced by the Paymaster of the College, who will charge the sum to the Cadet's personal account.

PHYSICAL REQUIREMENTS FOR CANDIDATES FOR COMMISSIONS IN THE ROYAL NAVY.—With a view to preventing candidates who may be physically unfit for His Majesty's Service from incurring the inconvenience and expense of preparing for commissions in the Royal Navy it is suggested that they undergo examination by the medical adviser of the family, or any other qualified medical practitioner, to whom the following list of defects which cause rejection may be submitted for guidance.

It is to be understood that this private examination is merely suggested as a guide for intending candidates and to lessen the chances of disappointment, and that it is by

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no means intended to take the place of, or to influence in any way, the regular official physical examination.

1. A weak constitution, imperfect development, physical weakness, either hereditary or from chronic disease, wounds, or injuries.

2. Skin disease, unless temporary or trivial.

3. Malformation of the head, deformity from fracture or depression of the bones of the skull, impaired intellect, epilepsy, paralysis, or impediment of speech.

4. Blindness or defective vision, imperfect perception of colours, fistula lachrymalis, or any chronic disease of the eyes or eyelids. Candidates for Naval Cadetships must possess full normal vision as determined by Snellen's tests, each eye being separately examined. For candidates for other branches of the Royal Navy, full normal vision is not required, but any defect of vision must be due to errors of refraction which can be corrected to normal by glasses, and vision without glasses must in any case be not less than $\frac{6}{60}$ with each eye, and the candidate must also be able to read D=0.6 of Snellen's test types.

5. Impaired hearing or discharge from one or both ears, or any disease of the external, middle, or internal ear.

6. Disease of the bones of the nose, or of its cartilages, nasal polypus, or disease of the naso-pharynx.

7. Diseases of the throat, tongue, palate, or tonsils, many unsound teeth,* unhealthy gums, disease of the glands of the throat or neck, external cicatrices, if at all extensive, and especially if adherent.

8. Functional or organic disease of the heart or blood vessels, deformity or contraction of the chest, or any symptom of lung disease or tendency thereto.

9. Undue swelling or distension of the abdomen, obesity, disease or enlargement of the abdominal organs. Rupture, weakness or

* *I.e.*, seven teeth defective or deficient in persons under seventeen years of age on the date of entry, ten defective or deficient teeth in persons above the age of seventeen—a tooth being considered as defective when it cannot be made permanently serviceable by dental repair. Credit is also given for teeth which have not erupted. Candidates must, however, possess some sound opposing molars and incisors. The numbers given above are intended as a general guide, and are not necessarily strictly adhered to, provided the general condition of the teeth is good.

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distension of the abdominal rings ; any disease of the bladder or incontinence of urine.

10. The existence of any defect of the genital organs, or of varicocele when it clearly forms, or is likely to form, a serious impediment to the efficient performance of duty—*e.g.*, when it is associated with varicose veins or piles.

11. Paralysis, weakness, impaired motion or deformity of the upper or lower extremities, from whatever cause ; a varicose state of the veins, especially of the leg. Bunions, distortion or malformation of the hands, feet, fingers, or toes.

12. Distortion of the spine, of the bones of the chest, or pelvis, from injury or constitutional defect.

No person will be admitted into His Majesty's Service unless he has been vaccinated. Re-vaccination will also be required if considered necessary.

Six nominations to Cadetships in the Royal Naval College, Dartmouth, are granted annually to H.M.S. *Conway*. For full information on this important point, see the chapter on the "Mercantile Marine."

Professor Ewing, Director of Naval Education, thus explains the course at Osborne and Dartmouth : During these four years the boy receives a broad and liberal education in the subjects of a modern side at a public school, along with a much greater amount of practical science and engineering than any public school gives or could give. Each of the colleges is furnished with a large workshop, in which the engineering training is given by Naval Officers of the engineering branch. The time spent in the workshops, together with that spent on theoretical subjects directly connected with engineering, makes up one-half of the Cadet's working time. The Cadet's life is a very strenuous one, but great care is taken to guard against overstrain. A highly important feature of the colleges is their naval character ; not only does the curriculum include a certain amount of teaching in sea-

manship and navigation, but the boys are under naval discipline, and are breathing a naval atmosphere throughout their course. There are many difficulties in combining organization under a Naval Captain with the proper action of a large staff of civilian masters, under a responsible Headmaster, but experience has shown that the difficulties are not insurmountable.

AFTER DARTMOUTH.—At the conclusion of the Dartmouth course, Cadets are subjected to an examination conducted by independent experts, who, however, confer with the teaching staff at Dartmouth. The results of this examination, which is very largely a test of general as opposed to professional training, carry rewards in the matter of seniority—two months for a first class, one month for a second class. Failures are rare, and the Inspectors of the Board of Education have reported that the system of training as a whole is a marked success.

This first examination behind them, Cadets go for a six months' cruise in one of the cruisers *Cornwall* or *Cumberland*, specially detailed for this service, and at this stage they receive the groundings of their professional training, which is fully acquired by the Midshipmen later in positions of responsibility.

On leaving the cruiser at the age of about eighteen, Cadets are distributed to various ships, and become Midshipmen in a gunroom with an equal number of Senior Midshipmen. At this stage in their career, they have opportunities of showing and developing those qualities which distinguish the good Officer as distinct from the man of intellectual attainment—the ability to control and handle men. For about two and a half years they are thrown upon their own resources as Midshipmen, and are

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subjected to tests in purely professional knowledge, such as Seamanship and Navigation; and, finally, they are sent ashore to undergo the first stage of the examination for the rank of Lieutenant. When this examination is passed, the Midshipman is promoted Acting Sub-Lieutenant, and on obtaining his Watch-keeping Certificate some six months later is appointed Lieutenant. After serving three years as Sub-Lieutenant and Lieutenant, Officers will be selected to specialize in various branches.

Those who are accepted for Gunnery, Torpedo, Navigation, or Engineering will attend a course of two terms, approximately six months, at the Royal Naval College, Greenwich. This course of instruction will comprise such duties as will fit the Officers to prepare for the practical courses of specialization. These Lieutenants' courses will take place three times a year. Lieutenants who do not wish to specialize will also be allowed to go through a course at Greenwich when their services can be spared.

SIR ALFRED EWING'S EXPLANATIONS.—In a lecture delivered at Portsmouth a few years ago, Professor Ewing, Director of Naval Education, gave an interesting sketch of the probable working of the new scheme. Since that time there has been modification or change in minor particulars, but the broad principles remain. Professor Ewing said: "It is estimated that about two-thirds of the Officers will take up one or other of the various specialist branches, the other third remaining general Service Lieutenants. The specialist branches are Engineering, Gunnery, Torpedo, Navigation, and the Marine or Military branch, distinguished by the letters E. G. T. N. and M. The diagram indicates the separation into the

various specialist lines, and also the bifurcation which will occur later between the ordinary specialist and the more

OSBORNE. 2 YRS.
DARTMOUTH. 2 YRS.
TRAINING IN CRUISER. $\frac{3}{4}$ YR.
SERVICE AS MIDSHIPMAN & SUB-LIEUT. 3 YRS.
GUNNERY TORPEDO & PILOTAGE COURSES $\frac{3}{4}$ YR.
COURSE FOR PART II. $\frac{3}{4}$ YR.
SERVICE AS LIEUT.

PASSING-OUT EXAMINATION

EXAMNS IN SEAMANSHIP & PART I

SPECIALIST COURSES

COM. E
COM. N
COM. M

LIEUT. E
LIEUT. G
LIEUT. T
LIEUT. N
LIEUT. M

GENERAL SERVICE
INSTRUCTIONAL
LIEUT.

COMMANDER

CAPTAIN

CAPTAIN E
CAPTAIN M

† Advanced Course.

advanced scientific specialist who takes a more extended course of training; thus the Officers selected to become

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Lieutenants E. will all have a course of shore training, qualifying them to be classed as Lieutenants E., while those who show the greatest promise will have a further course of a highly advanced character, and having taken it will be distinguished as Lieutenant E. Similarly a course will qualify Lieutenants G. and T., and the best of these will become Lieutenants G. or T. after an advanced course. Lieutenants N. will be trained much as they are now. The Marine specialist, or Lieutenant M., would receive a short training devoted entirely to professional subjects. On obtaining the rank of Commander, most of the specialists will revert to the non-specialist line, and proceed in it to executive command; but in two branches—namely, the Engineers and Marines—a certain proportion of the Officers will remain specialists after reaching command rank. Of these, again, a certain proportion will still remain specialists after reaching the rank of Captain, but those who do so will necessarily forego the chance of obtaining the command of fleets or squadrons. They will remain specialists on reaching flag rank, and will be eligible for appointment to important positions at the Admiralty, in the Dockyard, and in the corps of Royal Marines. It is expected that most of the Officers who receive the high engineering training qualifying for Lieutenant E. will remain specialists to the end, in view of the important technical positions which would be open to them, for which they will be particularly fitted by training, taste, and experience. Various alternatives before each Officer are shown by means of the diagram. Taking the fleet of 1908 as a basis of calculation, it appears probable that the number of Lieutenants who will be required annually to specialize in engineering will be roughly about 54; in Gunnery, 16; in Torpedo, 12; in

Navigation, 12 ; Marine Officers, 15. The remainder will be general Service Lieutenants.

“ For the higher scientific training which the Officers will undergo as Sub-Lieutenants and Lieutenants, and also for the training of Naval Constructors, a technical college is essential, with all the paraphernalia of laboratories which such training involves. For this purpose the college at Greenwich is now well equipped ; but, in view of the reduced number who will study there, it is difficult to say what the future may have in store for Greenwich. In any case, at Greenwich or elsewhere, a highly-equipped technical college is essential for the purpose of carrying out under proper conditions the scientific training involved in the Part II. Course, through which at least 60 per cent. of the Officers should pass, and also the higher scientific and technical courses for the Engineering, Gunnery, and Torpedo Lieutenants, as well as the course for Naval Constructors. This provision is required for the advanced specialists, who, though they form a numerically small part of the scheme, are an immensely important part of it, and may be regarded as essential to its success. Fears have been expressed in some quarters that Lieutenants may not be willing to volunteer in sufficient numbers for the engineering branch. What is important to recognize in this connection is that in the future engineering will stand in the same place with the gunnery and torpedo specialties as work for the best intellects of the Navy, and as giving augmented chances of rapid promotion. Compared with the general Service Lieutenant, the specialist will be at an advantage both as to the probability of promotion coming at all and as to its coming earlier. With regard to the few specialists who confine themselves in the senior ranks to their own speciality, among their compensations of fore-

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going chances of command are the greater probability of promotion, and the greater certainty of continued employment and of employment on shore. The scheme carries out reforms which are generally felt to be imperative.

“While making ample provisions for particular requirements, it will tend to weld the Service into a homogeneous whole. It will make Naval Officers, to a far greater extent than formerly, one in sentiment, one in tradition, one in aspiration. It provides that, in the stress of war, every Officer shall be a fighting unit. It provides that every Officer shall be a sailor, and that every Officer shall have the practical knowledge of mechanism, which the altered character of ships and the altered conditions of naval warfare have made so necessary. It gets rid of the presence in the ship of any element which does not admit of complete fusion with the main body. As regards the Marines, it has been said that the new scheme will endanger the future of the corps. May one not say that it removes a danger? So long as the Marines constituted as separate a body as they have hitherto done, they were surely in greater jeopardy as a permanent element of our naval system than when they came under conditions which led to a closer unification of interest and a more effective combination of effort. To senior Marine Officers in the past the Navy has had very little to offer. The Marine Lieutenant of the future will work with a great consciousness of being useful, in closer community of sentiment with his brother Officers, and with a better confidence as to what his profession has in store for him.”

In an Admiralty circular, dated April 6, 1906, the new arrangement is defined as follows:

“After passing for the rank of Lieutenant, they may be required to serve as general Service Officers or in one of the

special branches, undertaking either Engineering, Gunnery, Torpedo, Navigation, or Marine duty." Thus there will be no separate permanent group of Lieutenants, designated as Lieutenant (E) or Lieutenant (M), but the Engineering and Marine duties will be undertaken temporarily by Officers drawn from the general list of Lieutenants, as is the case with the navigating and gunnery departments at present.

ESTIMATE OF EXPENSES.—In estimating the total cost to a parent, the authorities arrive at the sum of £700 to £750, which includes all fees and extras at the Naval Colleges at Osborne and Dartmouth, the cost of original outfit, and an allowance of £50 a year for the Midshipman (three years). It should be borne in mind that the expenses incurred by individual Officers on going to sea varies considerably.

The Admiralty have recently decided to increase the number of Cadets entered at the annual fee of £40 (see Regulation 15, p. 81), and no longer to limit them to sons of Officers, though the selection will still be made with regard to the pecuniary circumstances of the Cadet. This will entail a reduction of £140 in the total mentioned above—say, £560 to £610.

PROSPECTS.—Up to the rank of Lieutenant promotion is entirely by seniority, accelerated in the event of successful examinations by possibly six months. Promotion to Commander and Captain is by selection, and it is impossible to give any statistics as to the chances of such selection. It is, however, certain that merit and ability are always recognized in the Service. Promotion to the higher ranks is by seniority and age, and those Officers who while yet young attain the rank of Captain are most likely to be appointed to the highest command.

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PAY PER ANNUM.—Lieutenant, on promotion (age about twenty-one), £182 10s. ; increasing automatically with time to £292 ; if employed on special service may amount to more than £400.

Commander, on promotion, £401 10s ; and may amount to nearly £550.

Captain, £410 12s. 6d. ; rising in some cases to more than £1,000.

The ordinary pay (without allowances) of the higher ranks are: Rear-Admiral, £1,095; Vice-Admiral, £1,460; Admiral, £1,825 ; and Admiral of the Fleet, £2,190.

The retiring pay of Naval Officers is on a liberal scale, and contrasts favourably with that of the Army. If the worst comes to the worst, an Officer in the Navy can look forward at forty-five to a Lieutenant's pension of £300 per annum, and this pension comes at an age when he is not too old to find some congenial employment ashore.

Rank.		Age of Compulsory Retirement.		Retired Pay.
Lieutenant	...	45	..	£300
Commander	...	50	...	£400
Captain	...	55	...	£500

OTHER POSTS.—We will now deal with three careers of a non-combative character—viz., Naval Clerkships, Surgeons in the Fleet, and Naval Chaplains. Other less important posts connected with the Navy will be considered in our chapter on the “Civil Service.”

ASSISTANT CLERKSHIPS.—These are very desirable posts, and offer a well-educated, determined youth every chance of rising to an important position. They are the first appointments in the Paymaster Department of the Royal Navy. The Paymaster on board one of the ships of His Majesty's Navy is the Officer who has charge of all

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the public money for the ship's maintenance. His duty includes the payment of both Officers and men once a month; he is responsible for the "messing" of the ship, and for all expenditure.

1. Appointments to Assistant Clerkships will be made by limited competition, with the following exception, viz. :

One candidate will be nominated annually, who will be required to obtain such an aggregate of marks in Class I. as may satisfy the Civil Service Commissioners.

2. This candidate will be selected by the Board of Admiralty from sons of Officers of the Navy or Royal Marines who have been killed in action or who have been lost at sea on active service, or killed on duty, or who have died of wounds received in action, or injuries received on duty within six months from the date of such action or injury, or who have performed long and meritorious service.

Except as regards exemption from the competitive examination, the candidate will be subject in all respects to these Regulations.

All other candidates will be nominated by the First Lord of the Admiralty.

Applications to have the names of candidates placed on the list should be addressed to the Assistant Private Secretary of the First Lord of the Admiralty. *Candidates for the June Examination must apply before March 31, and candidates for the December Examination before September 30. No applications received after those dates will be entertained.* Application should not be made until the candidate has reached the age of sixteen.

3. Two examinations for Assistant Clerkships will be held annually—in June and December—under the direction of the Civil Service Commissioners.

Candidates will be required to pay a fee of £1 10s. to the Civil Service Commissioners before the Educational Examination.

The Civil Service Commissioners will deal with all questions connected with such examination, and will announce the results.

4. No candidate will be eligible for examination in June who is under seventeen or over eighteen years of age on July 15 following, or for examination in December who is under seventeen or over eighteen years of age on January 15 following. As proof of the candidate's eligibility in point of age, a *Registrar's Certificate of Birth* must be produced. A certificate of baptism alone will not be accepted.

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5. The number of Assistant Clerks to be entered at each examination will be regulated by the requirements of the Service.

6. A candidate must be of pure European descent, and the son either—

- (1) Of natural born British Subjects, *or*—
- (2) Of parents naturalized in the United Kingdom.

If any doubt arises upon this question, the burden of clear proof that he is qualified will rest upon the candidate himself.

7. Candidates who may be successful at the Educational Examination will be required to pass the Medical Examination, according to the prescribed Regulations, before the Medical Director-General of the Navy, and must be found physically fit for the Royal Navy.

They must be in good health, and free from any physical defect of body, impediment of speech, defect of sight or hearing, and also from any predisposition to constitutional or hereditary disease, or weakness of any kind, and in all respects well developed and active in proportion to their age. The cases of short-sighted candidates, in other respects fit, will be specially considered.

The decision arrived at by the Medical Officers will be considered final.

8. Candidates if nominated will be required to produce—(1) certificates of good conduct from the masters of any schools at which they may have been educated during the two previous years, or, if educated at home, from their tutor or the clergyman of the parish in which they reside; (2) a certificate of ability to swim.

9. Candidates will be examined in the following subjects in Class I., and must obtain such an aggregate of marks as will satisfy the Civil Service Commissioner. They will also be permitted to present themselves for examination in two other subjects under Class II. :

CLASS I.

	Marks.
1. Arithmetic, including Mensuration	500
2. Mathematics* (Algebra, Geometry, and Trigonometry)	600

* Mathematics will include the following, practically treated: Triangle, the number and nature of the conditions that determine it, simple relations among its parts; Parallels; Areas, expression for the area of a parallelogram and of a triangle in terms of base and height; making triangle or square equal to any given figure; volumes easily deduced. Arithmetical definitions of ratio; properties of similar figures. Sine, cosine, and tangent of angles less

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	Marks.
3. English, including Handwriting, Spelling, Dictation, Composition, Précis and Shorthand, special attention being attached to Composition and Shorthand	700
4. Geography and English History, with special reference to the period since 1485	600
5. French or German, special attention being attached to the Oral Examination	400

CLASS II.

Two of the following subjects :

(a) Latin	600
(b) Greek	600
(c) Elementary Science, including simple questions in Mechanics, Heat, Properties of Matter, and the Chemistry of the commoner inorganic substances, with practical tests	600
(d) A second modern language	600

Certificate A, obtained in the Officers' Training Corps, will entitle the holder to receive 50 marks additional to the above.

10. The following are the rates of pay given to the Accountant Officers in the Navy :

		Per Day.			Per Annum.			
		£	s.	d.	£	s.	d.	
Assistant Clerks ... ..	...	0	2	6	45	12	6	
Clerks ... ..	...	0	4	0	73	0	0	
Assistant Paymasters ...	from 0 5 0	91	5	0	} According to Seniority.			
	to 0 13 0	237	5	0				
Paymasters	from 0 15 0	273	15	0				
	to 0 17 0	310	10	0				
Staff Paymasters	from 0 18 0	328	10	0				
	to 0 19 0	346	15	0				
Fleet Paymasters	from 1 1 0	383	5	0	} According to Seniority.			
	to 1 13 0	602	5	0				
Paymasters-in-Chief ... ..	...	1	18	0	693	10	0	

than 180°. Circle, simple relations, angle properties, tangents and rectangle properties. Algebraic formulas, graphs, equations, indices, logarithms in connection with the above, and other problems. Theorem of Pythagoras and its extension to any triangle.

The formulas $a^2 = b^2 + c^2 - 2bc \cos A$ and $\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$ and their application to the solution of triangles. Expression of $\sin 2A$ and $\cos 2A$ in terms of $\sin A$ and $\cos A$.

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The parents or guardians of Assistant Clerks are required to pay half-yearly in advance to the Accountant-General, to be held to their credit, £20 a year for each Assistant Clerk from the date of entry into the service until he is rated Clerk. An Assistant Clerk is rated Clerk after a year's service, provided he obtains the certificate of competency required by the Regulations.

It is further desirable that the parents or guardians of an Accountant Officer should be prepared to assist him pecuniarily to the extent of £100 on his promotion to the rank of Assistant Paymaster, at about twenty-one years of age, to enable him to obtain the uniform and other gear necessary for a Commissioned Officer.

MEDICAL OFFICERS IN THE NAVY.—These posts are obtained by competitive examination. Age twenty-one to twenty-eight. Fee £1. A candidate must be registered under the Medical Act in force as qualified to practice medicine and surgery in Great Britain and Ireland. His physical fitness will be determined by a Medical Board.

He must sign a declaration, stating age and date of birth, purity of European descent, freedom from disease, willingness to serve at home or abroad. Certificates of medical registration, character, and birth, must accompany the declaration, which must be returned to the Director-General, Medical Department, Admiralty, S.W.

The candidate will then be interviewed by the Medical Director-General, and his physical fitness will be determined by a Board of Naval Medical Officers. If accepted, he will be eligible to present himself at the entrance examination, which will be held twice a year.

Candidates will be examined by the Examining Board in the following subjects :

(a) Medicine, including medical pathology and therapeutics—1,200 marks.

(b) Surgery, including surgical pathology and clinical surgery—1,200 marks.

No candidate shall be considered eligible who obtains less than 50 per cent. of marks in each subject. The examination will be held in London, and will occupy four days.

The appointments announced for competition will be filled from the list of qualified candidates, arranged in order of merit; but, should it at any time be considered expedient to grant commissions beyond those periodically competed for, the Admiralty have power to admit annually not more than six candidates, according to requirements, specially recommended by the governing bodies of such Colonial Universities as may be selected, and whose qualifications are recognized by the General Medical Council.

Candidates so proposed are to be approved by the Director-General of the Medical Department of the Navy.

They will have to pass a physical examination before a Board of Naval Medical Officers in the Colony, and will be required to register their qualifications on arrival in England. They will be allowed, if they wish it, to compete at the next examination for entrance, and take their position according to the order of merit. Should they decide not to compete, they will be placed at the bottom of the list.

A fee of £1 will have to be paid by each candidate to entitle him to take part in the competition.

Candidates who have served in the Officers' Training Corps, and who are in possession of the certificates laid down in the Regulations for that corps, will be credited at the Entrance Examination with additional marks as follows: Candidates in possession of Certificate A will receive 1 per cent., and those who possess Certificates A and B 2 per cent., of the maximum number of marks allotted.

A candidate will not be allowed to compete at more than two examinations.

A candidate successful at the Entrance Examination will be appointed as Acting-Surgeon in the Royal Navy, and will be required to pass through such courses of instruction as the Admiralty may decide. At the end of the courses the Acting-Surgeon will be examined, and, after he has passed, will be given a commission as Surgeon in the Royal Navy. The commission will date from the day of passing the Entrance Examination. The number of marks gained at this examination, together with those gained at the Entrance Examination, will decide a candidate's place on the list for seniority. An Acting-Surgeon who fails to qualify in the above examination will be allowed a second trial at the next examination,

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the period between the two examinations not being counted as service for either promotion, withdrawal with gratuity, or retirement after twenty years' service, and should he qualify he will be placed at the bottom of his list; should he again fail, his appointment will not be confirmed, and he will be required to withdraw.

A gold medal, a silver medal, and three Navy regulation pocket cases will be awarded as prizes in connection with these examinations, and the Gold Medallist will have a distinguishing mark after his name in the Navy List.

Surgeons on entry are required to provide themselves with a regulation pocket case of instruments.

POST-GRADUATE INSTRUCTION AND EXAMINATION.

The Post-Graduate Instruction of Naval Medical Officers will consist of two distinct courses :

- (i.) A five months' course prior to advancement to Staff Surgeon ;
- (ii.) A second course of three months' duration for officers of not less than fourteen years' seniority.

Course (i.), which is compulsory for all Surgeons, will be followed by an examination before the Medical Examining Board in London, the successful passing of which will be a qualification for promotion the rank of Staff-Surgeon. The course is to be taken when a Surgeon has between four and a half and six and a half years' seniority, and as near the date when the latter period is completed as the exigencies of the service admit. The courses will take place twice a year.

The subjects of study and examination will be :

Compulsory—

- (a) Clinical Medicine and Clinical Surgery.
- (b) Operative Surgery.
- (c) Anæsthetics (practical).
- (d) Ophthalmology.
- (e) Clinical Pathology.
- (f) Hygiene.

Optional—

- (g) Throat, Nose, and Ear Diseases.
- (h) Skiagraphy.

A Surgeon who fails to obtain a pass will be allowed a second trial, but will not have a second course of instruction. Should he

again he unsuccessful, he will be compulsorily retired on attaining eight years' seniority, with such gratuity as the Admiralty may see fit to grant, but not exceeding £500.

Instruction in clinical pathology and hygiene will be given at the Naval Medical School; the remaining subjects will be studied at the "Dreadnought" Hospital and other civil hospitals in London, as may be arranged from time to time by the Medical Director-General of the Navy.

The Surgeons going through the course will be accommodated at the Royal Naval College, Greenwich, and will be under the general control of the President. Their instruction throughout will be under the immediate supervision of the Professor of Hygiene, appointed in charge of studies.

Course (ii.) is not compulsory, but is designed to afford Senior Officers the opportunity of refreshing their general knowledge of surgery and medicine, and of making themselves familiar with modern advances. There will not be any fixed syllabus of instruction or examination, but arrangements will be made in each case by the Medical Officer in charge of studies at Greenwich to meet individual requirements, and a report will be made by this Officer to the Medical Director-General at the close of the course. The Officers attending this second course will also be accommodated at Greenwich.

The special attention of candidates is directed to the following rules, under which Officers are allowed to withdraw from the Service after four years' full pay service in the Royal Navy, with the advantage of joining the Reserve of Naval Medical Officers.

After four years' service in the Royal Navy, an Officer, if he wishes, may pass from Active Service to the Reserve of Naval Medical Officers, when he will reap the following advantages :

- (i.) He will be granted a gratuity of £500 on passing into the Reserve.
- (ii.) His name will be retained in the Navy List; he will retain his naval rank, and be entitled to wear his naval uniform under the Regulations applying to Officers on the Retired and Reserved Lists of His Majesty's Navy.
- (iii.) If he agree to remain in the Reserve for four years, he will receive a retaining fee of £25 per annum. If, at the expiration of this period, he agree to remain in the Reserve for a further period of four years, he will continue to receive the same retaining fee.

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Should an Officer prefer it, however, he may simply enter the Reserve for a period not exceeding eight years, with power to give six months' notice of his intention to resign his position at any time (in which case he will receive no retaining fee). He may also adopt this method of Reserve Service after the expiration of four years served under the conditions referred to in (iii.), by renouncing his retaining fee for his last four years' service in the Reserve.

No Officer will be allowed to remain in the Reserve for a longer period than eight years.

Officers of the Reserve will be liable to serve in the Royal Navy in time of war or emergency. When called up for such service they will receive the rate of pay—viz., 17s. a day and allowances—to which they would have been entitled after four years' service on the Active List.

Rates of Pay.—Surgeon, £255 10s. to £328 10s.

Staff-Surgeon, £365 to £456 5s.

Fleet-Surgeon, £492 15s. to £638 15s.

Deputy-Surgeon-General, £821 5s.

Surgeon-General, £1,300.

In addition, Medical Officers in charge of hospitals are granted charge pay and hospital allowances on a specified scale.

Recent Regulations with regard to the pay of the Medical Service have improved the condition of the higher ranks, more especially in the more frequent increments of pay.

The scale of retired pay on compulsory retirement after reaching age limit is liberal. Further, the scale of gratuities upon *voluntary* retirement after service for four years and upwards is very attractive. Many a young Doctor has thus had the advantage of service in the Navy for a few years and has then retired with a gratuity that has enabled him to purchase a good practice ashore. The scale of gratuities is as follows :

After four years' full-pay service, £500 ; after eight

years, £1,000 ; after twelve years, £1,500 ; after sixteen years, £2,250.

CHAPLAINS IN THE NAVY.—The motives that would attract an earnest, vigorous young Clergyman to seek service in the Army operate with equal force in the case of the Navy. There is the roving, adventurous life of the sea, with its quickly-changing scenes and incidents, the daily contact with men who are ready to dare and die ; like his brother-chaplain in the Army he will need qualities of manliness and tact and grace, if his influence is to be for good in the close intimacy of life on board a man-of-war.

A candidate for a Chaplaincy in the Royal Navy must be in Priest's Orders, not over thirty, or in certain exceptional cases thirty-five, must produce testimonials from his Bishop, be examined by the Chaplain of the Fleet, and must pass the examination of the Medical Director-General.

Every Chaplain appointed for service must, as a condition to such appointment, receive a special ecclesiastical licence from the Archbishop of Canterbury and his successors, such licence to be one capable of recognition by all Bishops and other authorities of the Church of England throughout the world.

He will be appointed in the first instance for four years. If then approved, he will be placed on the established list of Chaplains ; if otherwise, he will be discharged with a gratuity of £500.

Chaplains who withdraw from the Royal Navy after four years' full-pay service (whether at their own request or not) will be eligible to receive a gratuity of £500 on leaving.

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Chaplains who may be retained beyond that period will be allowed, at the discretion of their Lordships, to withdraw from the Navy at the expiration of six, eight, ten, twelve, or sixteen years' service, with gratuities calculated upon the following scale—viz. :

After 6 years' full-pay service ...	... £600
„ 8 „ „ ...	... £800
„ 10 „ „ ...	... £1,000
„ 12 „ „ ...	... £1,200
„ 16 „ „ ...	... £1,600

Officers are to give six months' notice of their wish to withdraw with a gratuity, and similar notice will be given by the Admiralty, should it be decided to terminate an appointment at the end of four years' service.

A Chaplain's pay starts at £219 and rises to £401 10s. He is entitled to be victualled when on board ship.

Chaplains must retire at sixty, and may retire at fifty-five. Retired pay is on the following scale :

After 10 years' service ...	£50 per annum.
„ 15 „ „ ...	£100 „
„ 20 „ „ ...	£250 to £400 per annum.

There is also a pension for widows of £50 to £80 a year, with a further allowance for each son under eighteen and each daughter under twenty-one.

IV

THE MERCANTILE MARINE

As the safety of Great Britain ultimately depends upon the Navy, so do her food-supply and trade depend upon her splendid Mercantile Marine. To a boy of thoroughly strong constitution, who can stand the rough and tumble of a sailor's life, the Merchant Service offers many opportunities, and a steady, determined lad who loves his work, and has sufficient intelligence to pass the qualifying examinations, is fairly certain of a good position.

Parents will do well to remember that a sound physique is a matter of prime importance, and that boys who are colour-blind cannot become Officers in the Mercantile Marine. It is therefore essential that before taking any other steps the boy should be tested for vision and colour-blindness by the Official Examiners of the Board of Trade. This can be done at any Mercantile Marine office in the large ports on payment of a fee of 1s. The best way for a lad to enter the Merchant Service is through one of the School Training Ships, either the *Conway*, Rock Ferry, Birkenhead, or the *Worcester*, Greenhithe, Kent, where, for two years, he passes through an educational and nautical training, which is of the greatest possible advantage. The limits of age for admission are for the *Conway* twelve to sixteen, and, in certain cases, seventeen; and for

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the *Worcester* eleven to fifteen and a half, but in special cases boys up to sixteen are accepted.

The fees on the *Conway* are £75 per annum, and on the *Worcester* £68 5s. per annum, which include uniform, medical attendance, washing, and use of books and stationery. A charge of £6 more on the *Conway* is made per term for those who join the Royal Naval Class. Sons of nautical members of the Mercantile Marine Service Association and Officers of the Royal Navy are admitted to the *Conway* at special rates.

OUTFIT.—In addition to the uniform provided in the fees of the *Worcester* and *Conway*, an outfit has to be provided by the parents, costing between £15 and £25 on entry. After leaving the training-ship, a sea-going outfit has to be provided, costing between £10 and £15.

The education given in both these Colleges is similar, and comprises the following subjects: English, history, geography, scripture, French, drawing, arithmetic, geometry, trigonometry, theoretical and practical nautical astronomy, magnetism, the deviascope, meteorology, chart and nautical surveying. These are the main school subjects, whilst the practical work consists of seamanship in all branches, such as knotting, splicing, reefing, and furling sails, boat-drill, etc.; elementary steam, electricity, naval architecture, elementary wireless, etc. Physical drills, swimming, hygiene, etc., are also taught, and, in short, the curriculum comprises all the future Officer will require to know when he first sets foot on a merchant vessel.

The course extends over two years, at the end of which period a boy, say, of fourteen on entry, should have qualified for the parchment Certificate issued by the Committees

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of the Colleges under the authority of the Board of Trade. This Certificate is equivalent to one year's sea service, so that the holder has to serve as an apprentice for three years at sea, instead of four required from boys going direct to sea.

COURSES OPEN.—Two courses are open to a lad on the completion of his training—viz., to serve an apprenticeship of three years in a sailing-ship or the same period in steam.

If he is a stalwart, robust lad, and not too thin-skinned, he will do well to serve his time in a sailing-ship. The training is superior in many respects. He will become hardened to the rigours of sea life and pick up a good deal of useful knowledge that will serve him in good stead should he ever find himself later in difficulties incidental to the sea. There is more to do in a wind-propelled vessel that calls for resource and initiative, and, what is more, the opportunity of obtaining such excellent training is rapidly disappearing. But, as we have said, everything depends upon the aptitude and physical fitness of the boy.

1. **On a Sailing-Ship.**—The principal owners carrying premium apprentices are as follows: George Milne and Co., Aberdeen: Premium, £52 10s. Total wages paid during apprenticeship, £16. Aitken, Lilburn, and Co., Glasgow: £10 premium; £28 wages. Crawford and Rowat, Glasgow: £31 10s. premium; £26 wages. Thos. Law and Co.: £40 premium; £20 wages, plus an allowance of 12s. per annum for washing. C. E. de Wolf and Co. (by arrangement). The firms of Devitt and Moore and the White Star Lines are dealt with separately.

MESSRS. DEVITT AND MOORE announce that the improved plan of professional education for Officers in the Mercantile Marine,

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inaugurated by Lord Brassey in 1890, has proved a success. Their ships *Medway* (100 A1 at Lloyds) and *Port Jackson* (100 A1 at Lloyds) have been specially adapted to this purpose, with well-fitted cabins and large mess and schoolrooms. Surgeons are carried, and Naval Instructors, acting under the Captain, are appointed to teach the boys Navigation, Nautical Astronomy, and the higher branches of the profession. Great attention is paid to their instruction in Seamanship, and the boys have every opportunity of learning in a practical way, by handling the ship, what is taught them in the schoolroom. Control is exercised in matters of discipline, both on the voyage and in port. Special terms are offered to *Worcester* and *Conway* Cadets who have obtained their full certificates of two years' service on either of those vessels.

The premiums are as follows :

- First voyage, £60 ; if from the *Worcester* or *Conway*, £50.
- Second voyage, £50 ; if from the *Worcester* or *Conway*, £50.
- Third voyage, £50 ; if from the *Worcester* or *Conway*, £40.
- Fourth voyage, £40 ;

in full payment of all charges for premium and mess money. The duration of a voyage is about nine months. The premium is payable voyage by voyage, and either party is at liberty to withdraw at the close of any voyage. A charge of 7s. 6d. per voyage is made for stationery supplied for school work, and a charge of 30s. for the round voyage is made for washing at sea. This is independent of any washing charges in port. The table provided is equal to that of the Officers, and all mess utensils, etc., will be provided by the ship, but not bedding.

All applicants will have to produce certificates of good conduct from their last place of education. Certificates of conduct and efficiency are given for each voyage, which, if good, will be of advantage to the youths in obtaining future promotion.

Candidates should be presented at the Office, 12, Fenchurch Buildings, for inspection between the hours of 2 and 3.30 p.m. ; should distance from London preclude this, the height and chest measurements should be sent. Before taking any steps, however, friends should satisfy themselves as to the youth's physical fitness for the sea, especially with regard to sight and colour-blindness.

Among the shareholders of this firm are the Union Castle, the Shaw, Savill and Albion, the Cunard, and the Booth lines.

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WHITE STAR LINE (LIVERPOOL) SAILING-SHIP "MERSEY."—The value of sailing-ship training is exemplified in the case of this Company, for they have acquired a vessel of 1,829 tons gross register to train the future Officers of their vast fleet. She accommodates sixty boys and a staff of instructors to teach them their profession, preference being given to *Worcester* and *Conway* Cadets. The boys are articulated to the Company for three or four years, as the case may be.

The fees for ordinary Cadets are £70 first year, £60 second, £40 third, £30 fourth. *Worcester* and *Conway* boys are accepted at the reduced fees of £60, £40, and £30, inclusive of medical attendance and accommodation. There is a good conduct prize of £10 open each voyage to boys who have received half the total number of marks for all subjects, and boys passing their Second Mate's examination and holding an Officer's position for three years, are refunded £10 of the premium.

Boys are taken between the ages of fourteen and eighteen years, and receive, in addition to nautical instruction, lessons in general school subjects. They work the ship under instruction, and when in port are taught swimming, boat-sailing, discharging and stowing of cargo, etc.

Special regulations have been issued by the Board of Trade to facilitate qualified Cadets sitting for their examination for Second Mate on the completion of their apprenticeship, and later of passing the higher grades of First Mate and Master.

On obtaining his Second Mate's certificate the Cadet is appointed Junior Officer in one of the steamers of the White Star or Associated Lines, so that his future is thereafter assured.

The cost of the uniform and outfit is estimated at £25 for a voyage of ten months, and in addition there is a small charge for bedding, utensils, and washing, and also certain books and instruments.

Applications must be accompanied by certificate of birth, medical certificate, Board of Trade eyesight certificate, and testimonial from the last Schoolmaster. Forms can be obtained on application to the White Star Line, Liverpool.

The Admiralty have recently extended to *Mersey* Cadets and those trained by Devitt and Moore a number of appointments as probationary Midshipmen in the Royal Naval Reserve (new scheme), under similar conditions to those in force in regard to the *Worcester* and *Conway*.

2. On a Steamer.—Should a boy prefer to serve his time

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in a steamer, a premium varying from £10 to £60 is sometimes asked ; but owing to the shortage of boys coming forward for a sea life, the large majority of steamship owners have done away with the premium system. For instance, the Shipping Federation are contemplating offering inducements to owners to carry boys in ships belonging to the Federation without premium and at fair wages ; but it is too early yet to state definitely what the actual terms are. In most of the large cargo and passenger-carrying steamers boys are now accepted as apprentices, preference always, however, being given to those who have had a preliminary training such as has been described.

The premiums, where they are exacted, vary considerably, but some idea can be obtained by the following representative companies: Henderson Bros., Glasgow: deposit, £10; premium, £21; wages, £60. Ellerman Line, Glasgow: £20 premium, and wages, £26. Clan Line, Glasgow: £50 deposit returnable with 4 per cent. interest, and wages £72. Raeburn and Verel: no premium; no wages. Thomas Dunlop and Sons, Glasgow: deposit, £10; wages, £26. Asiatic Steam Navigation Co., Liverpool: deposit, £24, returnable with 6 per cent. interest and pay on being appointed Third Officer (with Second Mate's certificate) ranging from 40 rupees per month, rising with the various grades reached. Ellerman Lines, Liverpool: £50, which is returned; and wages, £84. T. B. Royden, Liverpool: no premium or wages. T. and J. Harrison, Liverpool: deposit, £20; wages, £54. British India Steam Navigation Co., London: premium, £52 10s.; wages, £90. Bucknall Steamship Lines: premium, £50; wages, £54 (no premium for *Worcester* and *Conway* Cadets). Walter Runciman and Co.: no premium; wages, £40.

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THE ROYAL MAIL STEAM PACKET COMPANY.—The Company receives into its service, to be trained as Executive Officers, a limited number of Cadets from the Training Ships *Worcester* and *Conway*, who are indentured to the Company as Cadets for three years.

To be eligible for a Cadetship a candidate must be not less than seventeen years of age, have completed two years' service in the *Worcester* or the *Conway*, and should hold a first-class extra Certificate for Seamanship and School-work.

The Company do not charge any premium, and on signing indentures they make a Cadet an allowance of £30 towards cost of uniform, and a further allowance of £20 per annum towards his expenses.

On reaching nineteen years of age, and on the completion of two years' service, a Cadet will, if there be a vacancy, and he is considered eligible, be rated "Supernumerary Officer," when his pay will be advanced to £40 per annum.

When at Southampton, Cadets are provided with free accommodation—i.e., board and lodging at the Officers' House. At sea they mess with the Junior Officers.

Forms of application may be obtained from the Company.

In addition to the main advantages afforded by the Training Ships in supplying a good educational and nautical training—which is imperative for the responsible posts on the great ocean liners—there are other advantages which are worth a parent's attention.

ADVANTAGES ATTACHING TO THE "CONWAY" AND "WORCESTER":

(a) The King's Gold Medals. His Most Gracious Majesty the King has been pleased to continue to grant the Gold Medals awarded annually to the best Cadet of the *Conway* and of the *Worcester* by Her late Majesty Queen Victoria. The medal is awarded to the boy on each ship who shows the qualities likely to make the finest sailor; "these consist of cheerful submission to superiors, self-respect and independence of character, kindness and protection to the weak, readiness to forgive offence, desire

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to conciliate the differences of others, and, above all, fearless devotion to duty and unflinching truthfulness."

The following Regulation will, by His Majesty's command, be observed in awarding the prize :

The Medal will be open to boys who have been one year on board the ship, and have received not less than half the total number of marks at the previous Quarterly Examination. The Commander, after conferring with the Headmaster, shall select not less than three nor more than five of the boys whom he considers to possess the qualities for which the prize is given. He shall then submit these names to the boys who have been assembled for the purpose in the school, and each boy who has been on board six months (one session) previously to the time of distribution, shall then and there vote for one of the boys so selected.

The boy who obtains the highest number of votes shall receive the medal.

(b) The Lords of the Admiralty present annually to Cadets on both ships several Commissions as Midshipmen in the Royal Naval Reserve. Cadets must be between sixteen and eighteen years of age at the date of appointment, must be British subjects, possess a first-class certificate (covering study and character), and be nominated by the Committee of their respective ships to the Admiralty.

(c) Appointments in the Bengal Pilot Service.—The Secretary of State for India in Council selects candidates recommended by the Committee of the *Conway* or *Worcester* as Leadsman Apprentices for the Bengal Pilot Service. The candidates must not be less than eighteen and not more than twenty-two years of age, and must produce a *Conway* or *Worcester* Board of Trade Certificate, as well as a Board of Trade Certificate of competency as Second Mate, and must have served at sea not less than three years in a square-rigged sailing vessel of over 200 tons. Each accepted candidate will receive a second-class passage to Calcutta and an allowance of £20 for outfit.

THE MERCANTILE MARINE [COURSES OPEN

On arriving at Calcutta and reporting himself to the Port Officer he will receive Rs. 107 a month. The rupee may be reckoned as 1s. 4d.

The following is the pay of the Bengal Pilot Service :

Junior Leadsman, Rs. 107 a month, rising through the various grades to Rs. 1,000 per month as Branch Pilot, with eventually a pension and leave on pay.

Advantages attaching to the “Conway”:

(a) Cadetships for the Royal Naval College, Dartmouth. The following are the regulations :

1. Six* nominations to Cadetships in the Royal Naval College, Dartmouth, will be granted annually to the *Conway* Training Ship of the Mercantile Marine.

2. Shortly before the end of each term, the Committee of the *Conway* may nominate two Cadets from their Training Ship for admission to the College as a Cadet of the Royal Navy, subject to their passing a qualifying examination and satisfying the conditions specified below.

Each Cadet so nominated will be required to pass an examination showing that he has reached the same general standard of training as is reached by Naval Cadets on leaving the Royal Naval College, Osborne.

3. The examination will be conducted, near the end of each term, at the Royal Naval College, Osborne, and will include tests in practical knowledge of the use of tools and workshop processes, as well as papers on the subjects dealt with in the Osborne curriculum.

The candidates, if successful, will be admitted to the Royal Naval College, Dartmouth, from the beginning of the term in January, May, or September following the examination.

4. Each candidate must possess the following qualifications :

- (a) He must be of very good character and conduct, and in all respects fit for entry into H.M. Navy.
- (b) He must not be less than 15 years 4 months, nor more than 15 years 8 months old on April 1 for the May entry,

* This number has been exceeded from time to time.

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August 1 for the September entry, or December 1 for the January entry.

- (c) He must have served in the Training Ship two years—*i.e.*, six terms, there being three terms a year.
- (d) He must have spent not less than one-fourth (or the equivalent of six months) of his two years' service in practical mechanical work under conditions satisfactory to the Admiralty.
- (e) Before attending the qualifying examination he must pass the medical examination for the Navy, according to the prescribed regulations.

5. The following Certificates must be forwarded at the time the candidate is nominated :

- (a) Certificate of birth.
- (b) Certificate of conduct.
- (c) Certificate of ability to swim.
- (d) Certificate of time served in Training Ship.
- (e) Certificate of time spent in practical mechanical work, with particulars of training.

The name and address of the parent or guardian must also be supplied.

6. The regulations as to the provision by parents or guardians of the outfit, the annual contribution of £75 per annum while the Cadet is at Dartmouth, and the private allowance, after passing out, will be the same as those with respect to other Naval Cadets.

7. Cadets entering under these regulations will be subject in all respects to the same discipline and conditions of service as other Cadets during their period of training at the Royal Naval College, Dartmouth, and will be liable to removal for the same causes.

On passing out they will be treated in the same manner as the other Cadets, and will rank according to the time gained and their position on the list.

(b) *The King's Prize.*—His Majesty the King, with a view further to encourage boys of the *Conway* School to qualify themselves for the Cadetships in the Navy, granted by the Admiralty, has been pleased to declare his intention of giving a prize annually to the boys of the *Conway* who compete for Cadetships in His Majesty's Service. The

prize will consist of a binocular glass, with a suitable inscription, and a sum of £35 towards the expense of the outfit of the boy. It will be open to all boys passing into the Royal Navy, and shall be awarded to the boy who passes highest in the competition during the year.

Advantages attaching to the "Worcester":

The *Worcester* does not train boys for Cadetships in the Royal Navy, but confines itself to the object for which it was founded *i.e.*, training Officers for the Merchant Service. It offers unique advantages in connection with some of the great Steam Navigation Companies.

The P. and O. Company are prepared to facilitate the entry of a limited number of youths into their sea service as Executive Officers by passing them through a preliminary training in the *Worcester*, on the following favourable conditions:

The Company will, in the case of candidates who may be selected under this arrangement, contribute a moiety, equal to 32½ guineas per annum, of the *Worcester* fees, during a period not exceeding three years.

The Cadets thus appointed may, subsequent to their training on board the *Worcester*, elect to serve three years in a sailing-ship, the Company paying the whole of the premium, or they may go direct into their steamers (without premium) as Cadets.

Candidates must not be under fifteen years of age, and must pass Preliminary Examinations to show that they are, for their age, sufficiently instructed and in perfect health.

Form of application may be obtained by addressing—The Secretary, P. and O. Company, 122, Leadenhall Street, London, E.C.

When a lad has entered the Service, he can hope to move upward as follows:

After four years' apprenticeship, if he is seventeen years old, he can try to pass the Board of Trade Examination for his certificate as Second Mate.

N.B.—Two years' training on the *Conway* or *Worcester* will count as one of the four years.

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After five years at sea, if he is nineteen, he can try for his certificate as First Mate.

After six years at sea, if he is twenty-one, he can try for his certificate as Master.

PAY IN THE MERCANTILE MARINE.—It has been difficult to state the range of pay, because it differs largely according to the particular line or company, and according to the trade in which they are engaged, but the following may be taken as fairly representative :

PASSENGER STEAMERS.

		Chief. £	Second. £	Third. £	
First class ...	...	17-25	14-18	11-16	per month
Second class ...	...	14-18	12-13	10-11	„

TRAMP STEAMERS.

		Chief. £ s. d.	Second. £ s. d.	Third. £ s. d.	
Under 5,000 tons ...	12 0 0	9 0 0	7 0 0		per month
5,000 to 8,000 tons	12 10 0	9 10 0	7 10 0		„
Over 8,000 tons ...	13 0 0	10 0 0	8 0 0		„

Capable Officers can often, on retiring from the sea, obtain good posts as Harbour Masters, Lloyd's Agents, Superintendents of Marine, etc.

Board of Trade Examiners receive from £200 to £400 a year, Nautical Surveyors from £200 to £600, while Trinity House Elder Brethren receive twice as much. We would direct the attention of parents to a book, obtainable through any bookseller, which gives much useful information about the Mercantile Marine: *How to go to Sea in the Merchant Service*, by Frederick H. Stafford, Secretary of the Thames Nautical Training College, H.M.S. *Worcester*, published by James Brown and Son, Glasgow, price 2s. 9d. post free.

V

MEDICINE, ETC.

I. PHYSICIANS AND SURGEONS

BEFORE deciding on the Medical Profession as the future career for a son, it would be well for the parent to consider the points for and against such a choice.

On the one hand, it must be remembered that the minimum period of time taken by a candidate to qualify for his profession is five years. In some Universities the course extends over five and a half years. It is frequently stated that the average time taken by students in this country to qualify, after allowing for an occasional failure along the course, is seven and a half years. The statement is undoubtedly an exaggeration, for it exceeds the usual time by twelve to eighteen months. Even after this lengthy period of probation, if the young doctor wishes to do well in the profession, he will spend anything from one to three years more in hospital in unremunerative appointments in order to widen his experience, to acquire technical skill, and to enable him to succeed at the higher examinations. The question of expense must also be considered. It is usually estimated that a student of moderate tastes, when hospital fees, examination fees, cost of maintenance, books, etc., have been dealt with, has spent close

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on £1,000 in obtaining a bare qualification. Finally, the work of a medical student and of a medical man calls for a sound physical constitution. A diligent and industrious student finds an increased strain thrown upon his health by such uncongenial surroundings as out-patient departments and hospital wards. A good deal is said concerning the harrowing effects of medical training upon the "nerves"; but it may here be mentioned that it is a most exceptional occurrence for a student to faint when, for example, he first makes his acquaintance with the operating theatre. The necessity of robust health is still more apparent in the case of a medical practitioner, particularly as he advances in years, in view of the liability to be called to his work at any time, day or night, in all weathers and seasons, and to be compelled to spend many hours at a time in attendance upon an important case.

On the other hand, the practice of medicine is not without its attractions. There is hardly any other profession which offers rewards with such certainty in return for energy and perseverance. A medical man does not in these days amass a great fortune; but if he takes his work seriously, he can at least rely upon making a comfortable income. Moreover, there are rewards which cannot be translated into money value, and these are showered in profusion upon the conscientious practitioner of medicine and surgery. During a busy lifetime he earns the implicit confidence, the sincere respect, and the undying gratitude of countless numbers of his fellow-beings.

EXAMINATIONS.—To become qualified to practice it is obligatory to have passed a Preliminary Examination by some examining body recognized by the Medical Council, and then, having attained the age of sixteen at least, to

go through a five years' course of training before taking the Final Examination.

Subject to any conditions which may be indicated under the various examinations in the list given, the Preliminary Examinations recognized by the General Medical Council are required to include the following subjects :

(a) *English*: Grammar, paraphrasing, composition, questions on English history, and geography.

(b) *Latin*: Grammar, translation into English from unprescribed Latin books, translation into Latin from English.

(c) *Mathematics*: Arithmetic, algebra (including easy quadratic equations, geometry (including the subject-matter of Euclid, Books I., II., and III.) and simple deductions.

(d) One of the following subjects :

(1) *Greek* grammar, translation into English from unprescribed Greek books, translation into Greek from English ; or—

(2) *A modern language*: Syllabus as for Latin.

The following are the principal recognized *Preliminary Examinations*, a certificate in any of which will entitle a youth to be registered as a medical student, provided it covers the subjects mentioned above. The latest syllabus of each examination should always be consulted :

Oxford University.—Junior Local Examinations (if passed before December 31, 1913). Senior Local Examinations (certificates to be endorsed as fulfilling the Council's requirements). Higher Local Examinations (certificates to include the required subjects). Responsions. Moderations.

Cambridge University.—Junior, Senior, and Higher

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Local Examinations under similar conditions to those of Oxford. Previous Examination. General Examination.

Oxford and Cambridge Schools Examinations Board.—Examination for the Higher Certificate and for the School (or leaving) Certificate (the certificates to include the required subjects).

University of London.—Matriculation Examination and the Senior School Examination (the certificates in either case to include the required subjects).

Other Universities.—The Matriculation Examinations of the Universities of Durham, Manchester, Liverpool, Leeds, Sheffield, Birmingham, Bristol, Queen's University (Belfast), and National University of Ireland, under certain regulations as to the subjects required.

Scottish Universities.—Preliminary Examinations of the Joint Board of Examiners of the Scottish Universities.

University of Dublin.—Junior Freshman Term Examination (exclusive of trigonometry). Special Preliminary Examinations held in March. Junior Exhibition Examination under certain regulations as to marks obtained. Examinations for the first, second, or fourth year in Arts (certificates to be signed by the Medical Registrar of the University).

Other Examinations.—Leaving Certificate Examination of the Scottish Education Department (certificate to include the required subjects). Middle Grade and Senior Grade Examinations of the Intermediate Education Board of Ireland and Senior Certificate Examinations of the Central Welsh Board (certificates in each case to include the required subjects). In addition to the above, the Matriculation Examinations of the chief Colonial Universities, and certain Examinations of European Universities, the Egyptian Government, etc.

Attendance at a medical school is not necessary for any of the Preliminary Examinations. Almost all public and secondary schools now arrange their curriculum with a view to one or more of these examinations.

The London Matriculation Examination offers special advantages, as it is also the first step to a London medical degree as opposed to a diploma, a matter of moment, as the status of an M.D. is considerably higher than that of one who has not that distinction. Exemption from the London Matriculation can now be obtained through the Oxford or Cambridge Senior Local Examination.

Having been registered, the medical student has at least five years' training ahead of him, and whatever degree or diploma he intends to acquire, he has three main examinations to pass. The candidate is allowed to take his Preliminary Scientific or First Professional Examination at the end of one year's study, the subjects being chemistry, physics, and biology. After a further course of two years' tuition, he will enter for his Intermediate or Second Professional Examination in the subjects of anatomy, physiology, and pharmacology. For these two examinations attendance at a recognized medical school is necessary. The remainder of his course he spends in "walking the hospitals," preparing for his Third or Final Professional Examination in the subjects of medicine, surgery, midwifery, etc.

Broadly speaking, there are three courses open to him according to the kind of qualification he proposes to obtain. Whether (1) a medical degree at Oxford or Cambridge; (2) a medical degree at London or some other University; or (3) the diploma granted by the Colleges of Physicians and Surgeons (*e.g.*, M.R.C.S. and

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L.R.C.P. of London, L.R.C.S. and L.R.C.P. of Edinburgh, and L.F.P.S. of Glasgow).

The difference between a degree and a diploma is of no small importance: a young fellow at the Universities forms friendships with able men who intend to enter other professions, and these friendships are valuable to him in after-life; thus the graduate has, as a rule, a better standing socially and professionally, and this advantage should be carefully considered at the outset. The degree course is harder, and thus the advantage of having the letters M.D. to one's name is not merely sentimental. Moreover, it frequently happens that the University man takes the examinations of the Joint Board of the Royal College of Surgeons and the Royal College of Physicians as well as those for his degree; his work is thus twice tested, and his capacity doubly guaranteed. Opinion may differ as to the comparative value of an M.D. degree at Oxford or Cambridge or London. The London degree, as a test of ability, perhaps comes first; but the degree of the older Universities has a higher value socially. It has also its influence in deciding the voting for public appointments in connection with hospitals, the holding of which is often so essential a factor of future success. The medical degree of the Scotch Universities, especially those of Edinburgh and Glasgow, have a very high reputation, and here students of Scottish birth, or those who have been two years in attendance after the age of fourteen at schools or institutions under inspection of the Scotch Education Department, may, subject to certain conditions, avail themselves of the help offered under the Carnegie Trust. Dublin, Durham, and the Universities of Leeds, Manchester, Liverpool, Birmingham, Bristol, and Wales attract many students.

COST OF COURSE.—As to expense, the Oxford or Cambridge degree will cost about £1,000, that of London £900, while expenses at the other Universities will range from £500 to £700. The expenses of an ordinary student at a London hospital, who desires to take the qualification of the diploma of the Conjoint Board, will be much the same as if he were aiming at the London University degree.

DETAILS—Oxford or Cambridge Degree Course.—This involves three years' residence at the University, and remaining at school probably till eighteen or nineteen. At the end of three years the student will have taken his B.A. (in Natural Science), which is necessary before proceeding to a degree in the higher faculty of medicine. But during that period he will take examinations in preliminary and intermediate science for his M.B., and then join a medical school attached to a hospital in London or elsewhere as a third year student, and take two years in preparing for his final.

The expenses of the period spent at the University may often be materially decreased by the securing of suitable scholarships or studentships. The Tancred Studentship, for instance, at Gonville and Caius College, Cambridge, tenable under certain conditions for eight years, and awarded to medical students who are in need of help in providing the funds for their University career, is of the value of about £72 per annum. Particulars with regard to this studentship may be obtained from George Edgar Frere, Esq., Lincoln's Inn Fields, London.

In the subsequent period of his training, spent in a London hospital, his expenses in the matter of fees will vary from £70 to £80 for the two years. Here, again,

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the cost can be materially reduced by securing one of the numerous scholarships open to University candidates.

SCHOLARSHIPS OPEN TO UNIVERSITY CANDIDATES.

St. Bartholomew's, three University Scholarships of £20 to £50.
St. George's, two University Scholarships of £50 and 70 guineas.
Guy's, three University Scholarships of £50 to £120.
King's College, two University Scholarships of £50 and £20.
London, one University Scholarship of 50 guineas.
St. Mary's, two University Scholarships of 50 guineas each.
Middlesex, one University Scholarship of £50.
St. Thomas's, one University Scholarship of £50.
University College, two University Scholarships of 80 guineas each.
Westminster, two University Scholarships of £50 each.

The examinations for these scholarships are up to the standard of the intermediate science examination which has already been reached, and details concerning them may be obtained from the Deans of the various schools.

London Degree Course.—Those who take this generally join one of the London Medical Schools, at which the expenses for tuition vary from 120 to 150 guineas for the whole course, the necessary books and instruments about 20 guineas, special classes £25 to £30, and examination fees £25 for M.B. If a student also goes in for the diploma course, he will have to pay further fees amounting to 40 guineas. Particulars with regard to the advantages offered to students by some of the leading medical schools will be found in the next two sections.

Diploma Course.—Here the examination fees are higher than for a degree—viz., £42—but since the diploma course is shorter, and as the ordinary work of the medical schools is sufficient without special classes, the actual expenditure of those who seek a diploma is less than of those who gain a degree. Board and lodging vary :

rooms alone range from 12s. 6d. a week upwards, with board included from 30s. to 50s. Sometimes practitioners are willing to board and lodge a student for about two guineas a week. Or the student may join a residential college attached to a hospital, paying one guinea a week for board, and from 14s. to 18s. for rooms. There is, however, only accommodation for a few at these colleges, and early application for admission is necessary.

LONDON MEDICAL SCHOOLS.—In the case of a clever boy who has done well at school, there are many opportunities of lessening expenses at the London Medical Schools. Special attention may be drawn to the following well-known institutions.

St. Bartholomew's Hospital.—This is one of the oldest hospitals in London, and will attract many students for its old traditions. Additions have recently been made both to the school and hospital. The equipment has thus been brought thoroughly up-to-date. There are five entrance scholarships, ranging in value from £50 to £150, and also numerous prizes for students.

Charing Cross, St. George's, King's College, and Westminster Hospitals.—These four smaller hospitals have a joint school for the first three years' course at King's College, Strand (University of London Laboratories). This action on their part marks an onward step in the concentration of medical education in London, and should prove of immense service to the profession. At these four hospitals, where classes are small, more individual attention is perhaps paid to students than in the larger ones. They are generous in the matter of entrance scholarships.

Guy's Hospital.—This hospital is well known, both for the standard of its teaching and for the prowess of its

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students in athletics, this latter fact no doubt attracting many students. It boasts of a residential college with accommodation for fifty students. Entrance scholarships of £100 and £50 are offered for competition each year.

London Hospital.—This famous hospital offers exceptional opportunities for experience, possessing as it does the largest out-patient department in the kingdom. Owing to the large number of students, the school's interests in athletics are both varied and good. There are several entrance scholarships offered, and numerous prizes for students in the school.

St. Mary's Hospital.—St. Mary's is deservedly famous as the home of the vaccine treatment for diseases. It is situated near the Great Western Railway terminus at Paddington, and has a large number of accidents to treat. The school authorities are liberal in regard to the number and value of the entrance scholarships offered.

Middlesex Hospital.—The recent erection of Cancer Research Laboratories and Wards has enabled the Middlesex to take a leading part in the investigation of that dread disease. The hospital also affords good experience in other branches of the profession. As in all the London hospitals, several entrance scholarships are awarded annually.

St. Thomas's Hospital.—This fine building is pleasantly situated on the south side of Westminster Bridge, and overlooks the Thames and the Houses of Parliament. It is known in London as the home of University men, and prepares more students for Oxford and Cambridge degrees than any other London hospital. There are several entrance scholarships for competition.

University College Hospital.—The preliminary and intermediate science courses are here taken at the University

of London Laboratories, opposite the hospital in Gower Street. The hospital is famous for much good and original work. The hospital buildings are modern and extensive structures. Scholarships on "Arts" subjects are awarded each year.

PROVINCIAL MEDICAL SCHOOLS.—There are several provincial schools where the teaching is excellent, and the training much the same as in the London schools. Living expenses in the provinces, it must be remembered, are less than in London. The reputation of the London schools, however, makes it desirable to attend them if possible.

The following are the best known provincial medical schools :

Glasgow.—The great majority of students in Glasgow take their hospital course at the Western Infirmary (600 beds), or at the Royal Infirmary (673 beds). Glasgow also boasts of one of the most up-to-date Maternity Hospitals in the United Kingdom. The Medical School here offers several advantages: it is cheap, and few men take more than five years to complete the course. The number of students is small compared with the material at their disposal, and there are no less than thirty "House Appointments," which are made half-yearly. Providing a student has a home for the vacations, the whole five years should not cost more than £500 to £600.

University of Durham—College of Medicine, Newcastle-on-Tyne.—This institution offers many advantages to medical students, and is well known for the excellence of its arrangements. There are thirteen scholarships and prizes of Durham University open to students at the

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College. For further particulars, application should be made to the Secretary.

University of Bristol.—This school, through its connection with several large hospitals, enables students to obtain a wide and varied experience. For particulars, apply to the Dean of the Medical Faculty.

Leeds University.—The medical school in this University is splendidly equipped, and is rapidly gaining a prominent place amongst the British Schools of Medicine.

Degrees of Other Universities.—There are other degree courses which may be taken, the fees for which vary slightly. Students, for example, who take the Durham course attend the College of Medicine at Newcastle, above referred to; the examination fee is 25 guineas.

In Scotland the largest number of medical scholarships is given at Edinburgh, where the Faculty of Medicine has a full curriculum in medicine and surgery; four degrees are conferred by the University, and they qualify for practice throughout His Majesty's dominions, and for admission to the Naval, Military, and other Public Medical Services in the United Kingdom. The scholarships at Edinburgh are available for three or four years, ranging in value from £25 to £100 a year, a considerable number (from £20 to £28) being held for one year, and competed for among students at the different stages of the medical course. Graduates in medicine have the opportunity of competing for some ten scholarships or prizes, varying from £31 to £153 in value.

At Aberdeen there are seven bursaries of from £7 to £22, tenable for three or four years, and at Glasgow they range from £16 10s. to £35, and are held for one, two, three, or four years.

At Liverpool University there is also an excellent

medical school, which includes departments for the study of Tropical Medicine, Public Health, and Comparative Pathology. There is a residential hall for students.

There are numerous scholarships, exhibitions, and fellowships, as well as other special grants and prizes. Further particulars can be obtained from the Registrar.

There are also well-known medical schools at other Universities—*e.g.*, Birmingham, Manchester, Sheffield, Dublin, and Wales—all of which have their own scholarships and bursaries. The calendars of these schools should be consulted for further particulars.

After qualification, if time and means permit, a further course of study at a Continental medical school is very advantageous, and for the more brilliant there are research scholarships attainable at most London hospitals of about £100 in value. But these are few, and most men require to begin making a living at once. For beginners there are annual appointments as House Surgeon or Physician in London hospitals and provincial infirmaries, which bring valuable experience. For a year or two it is not unusual to obtain a surgeoncy on board ship, particularly on the great liners to America or the East; this is only advisable for a brief period, as it does not lead to much. In our chapter on "The Army," we have dealt with the splendid opportunities offered to able men in the Royal Army Medical Corps, and in our chapter on "The Navy," with the equally attractive post of Naval Surgeon. The competition is severe, and a special examination must be taken; but the pay is good and a pension secure.

PROSPECTS.—The great majority of men must, of course, go into general practice, the prospects of which

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depend greatly on the talents developed in the course of training.

Speaking generally, the present is a good time for entering the profession. During recent years the number of those entering it has been reduced to such an extent as to cause considerable anxiety to the Medical Faculty at our Universities. Moreover, there are now more openings for the beginner than have previously existed, while he has not, since about 1897, to enter into competition with the unqualified assistant. Official posts of all kinds have been and are rapidly increasing. These include not only further appointments for medical officers of health, but those for the medical inspection of school children, for referees under the Compensation Act, and latterly appointments for tuberculosis officers. The National Insurance Act has added a considerable number of patients to the practice of most general practitioners, so that many men who were formerly able to cope with their work single-handed are now compelled to seek a partner or to employ an assistant. As a result, there is a serious dearth of candidates for such poorly-paid posts as House Surgeon or House Physician to provincial hospitals, and the salaries obtainable by assistants have increased in some cases by 100 per cent. during the last year. The minimum weekly salary earned by a *locum tenens* has been for several years past four guineas, with residence and travelling expenses. This year, however, the salary has ranged from five to ten guineas weekly with similar emoluments. The annual income of assistants in general practice varies at present between £250 and £300 as against £150 and £200 a little more than a year ago. Corresponding alterations are seen, too, in the offers of steamship and asylum services. When the young medical man wishes to set up in practice for him-

self, some capital is very desirable to enable him to purchase a partnership in, or the succession to, an already established practice. If this is impossible, he must begin humbly on his own account, and work hard, and wait. The able man, if he shows judgment in choosing a locality which is not already over-supplied with doctors, will in a year or two win recognition, and secure a comfortable income.

The man who has the ability and the means to specialize in some branch—in surgery, skin diseases, eye diseases, for example—should certainly do so. But it must be remembered that the making of a specialist is a slow and costly process, for, after qualification, he must spend years in training for his particular department, and must be possessed of sufficient ability to be elected on the staff of a hospital, and to pass one or more of the higher examinations. There can be no doubt that the ultimate result is worth the effort, for the specialist obtains higher fees and has more leisure time at his disposal than has the general practitioner.

As stated in the foregoing pages, there is a constantly increasing number of public appointments offered by municipal bodies. The salary obtained in such posts may be exceeded by an enterprising man in private practice; but the income is secure, the hours of work are usually limited to the day-time, and many of them carry good pensions.

For a young man of clear head and strong will, with a tender but courageous heart, there can be no profession wider in its blessing and nobler in its aim than that of the Physician or Surgeon.

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REGULATIONS FOR THE EXAMINATION OF CANDIDATES FOR ADMISSION TO HIS MAJESTY'S INDIAN MEDICAL SERVICE.

The advantages offered to the young medical man by the Indian Medical Service are so substantial, and the opportunities of usefulness so wide, that it may be well to give details of this attractive service.

1. The Regulations are those in force at the present time. They are subject to any alterations that may be determined on.

2. Candidates must be natural-born subjects of His Majesty, of European or East Indian descent, of sound bodily health, and, in the opinion of the Secretary of State for India in Council, in all respects suitable to hold commissions in the Indian Medical Service. They may be married or unmarried. They must possess, under the Medical Acts in force at the time of their appointment, a registrable qualification to practice both medicine and surgery in Great Britain and Ireland.

Candidates for the January examination in each year must be between twenty-one and twenty-eight years of age on February 1 in that year, and candidates for the July examination must be between twenty-one and twenty-eight years on August 1.

3. They must subscribe and send in to the Military Secretary, India Office, Westminster, *so as to reach that address by the date fixed in the advertisement of the examination*, a declaration according to specified form.

4. This declaration must be accompanied by the following documents :

(a) *Proof of age* either by Registrar-General's certificate, or, where such certificate is unattainable, by the candidate's own statutory declaration, forms for which can be obtained at the India Office, supported, if required by the Secretary of State, by such evidence as he may consider satisfactory. A certificate of baptism which does not afford proof of age will be useless.

[N.B.—*In the case of Natives of India it will be necessary for a candidate to obtain a certificate of age and nationality issued under G.G.O. No. 477, dated May 22, 1903, Military (Medical) Department.*]

(b) A recommendation and certificate of moral character from two responsible persons—not members of the candidate's own family

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—to the effect that he is of regular and steady habits, and likely in every respect to prove creditable to the Service if admitted.

(c) A certificate of having attended a course of instruction for not less than three months at an ophthalmic hospital, or the ophthalmic department of a general hospital, which course shall include instruction in the errors of refraction.

(d) Some evidence of having obtained a registrable qualification.

(e) Any European educated in India, and every native of that country, will be required to produce a certificate signed by the Director-General, Indian Medical Service, that he is a suitable person to hold a commission in the Indian Medical Service.

5. The Secretary of State for India reserves the right of deciding whether the candidate may be allowed to compete for a commission in His Majesty's Indian Medical Service.

6. The physical fitness of each candidate will be determined by a Board of Medical Officers, who are required to certify that his vision is sufficiently good to enable him to pass the tests* laid down by the Regulations.

Every candidate must also be free from all organic disease, and

* These are as follows :

1. Squint, or any morbid condition of the eyes or of the lids of either eye liable to the risk of aggravation or recurrence, will cause the rejection of the candidate.

2. The examination for determining the acuteness of vision includes two tests : one for distant, the other for near, vision. The Army test types will be used for the test for distant vision, without glasses, except where otherwise stated below, at a distance of 20 feet ; and Snellen's Optotypi for the test for near vision without glasses, at any distance selected by the candidate. Each eye will be examined separately, and the lids must be kept wide open during the test. The candidate must be able to read the tests without hesitation in ordinary daylight.

3. A candidate possessing acuteness of vision, according to one of the standards herein laid down, will not be rejected on account of an error of refraction, provided that the error of refraction, in the following cases, does not exceed the limits mentioned—viz. : (a) in the case of *myopia*, that the error of refraction does not exceed 2·5 D ; (b) that any correction for *astigmatism* does not exceed 2·5 D ; and, in the case of myopic astigmatism, that the total error of refraction does not exceed 2·5 D.

N.B.—In all other respects candidates for these two branches of the Service must come up to the standard of physical requirements laid down for candidates for commissions in the army.

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from constitutional weakness, or other disability likely to unfit him for military service in India. More detailed regulations as to the physical requirements will be forwarded on application.*

7. Candidates who pass the physical examination will be required to pay a fee of £1 before being permitted to compete.

8. On proving possession of the foregoing qualifications, the candidate will be examined by the Examining Board in the following subjects, and the highest number of marks obtainable will be distributed as follows :

	Marks
(1) Medicine, including Therapeutics ...	1,200
(2) Surgery, including diseases of the eye ...	1,200
(3) Applied Anatomy and Physiology ...	600
(4) Pathology and Bacteriology ...	900
(5) Midwifery and Diseases of Women and Children ...	600
(6) Materia Medica, Pharmacology, and Toxi- cology ...	600

* Candidates may, if they wish it, undergo a Preliminary Examination by the Medical Board, which meets at the India Office every Tuesday under the following conditions :

(a) Applications must be addressed to the Under Secretary of State, India Office, Whitehall, London, accompanied by a fee of two guineas.

(b) Candidates must pay their own travelling expenses.

(c) Candidates considered to be unfit by the Medical Board at this Preliminary Examination are not bound to accept its opinion, but may, *at their own risk*, continue their studies, with the knowledge that they will have to submit themselves for a Final Medical Examination by the Medical Board prior to the examination.

(d) On the other hand, it must be distinctly understood that the Preliminary Examination by the Medical Board is held solely for the candidate's information, and that, if after that examination he is reported to be apparently fit, he has not on that account any claim to be accepted as physically fit when he presents himself for the Final Medical Examination, upon which alone his acceptance or rejection will depend. Candidates may be considered fit for the Service at the Preliminary Examination, but may be found at the Final Examination to be unfit, either on account of some physical defect which did not exist or passed undetected at the Preliminary Examination, or for other reason.

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N.B.—The examination in medicine and surgery will be in part practical, and will include operations on the dead body, the application of surgical apparatus, and the examination of medical and surgical patients at the bedside.

No syllabus is issued in the subjects of the examination, but it will be conducted so as to test the general knowledge of the candidate in all subjects.

No candidate shall be considered eligible who shall not have obtained at least *one-third* of the marks obtainable in each of the above subjects, and *one-half* of the aggregate marks for all the subjects.

For the Clinical Examinations each candidate should provide himself with note book, pencil, stethoscope, and ophthalmoscope.

9. Having gained a place at the Entrance Examination, the successful candidates will be commissioned as Lieutenants on probation, and will be granted about a month's leave. They will then be required to attend two successive courses of two months each at the Royal Army Medical College and at Aldershot respectively.

The course at the Royal Army Medical College will be in—

- (1) Hygiene.
- (2) Military and Tropical Medicine.
- (3) Military Surgery.
- (4) Pathology of diseases and injuries incidental to military and tropical service.
- (5) Military Medical Administration.

The course at Aldershot will include instruction in—

- (1) Internal Economy.
- (2) Army Service Corps subjects.
- (3) Hospital Administration.
- (4) Stretcher and Ambulance Drill.
- (5) Equitation.
- (6) Map reading.

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At the end of each course they will be examined in the subjects taught, and in order to qualify, each Lieutenant on probation must obtain 50 per cent. of the total maximum marks. A Lieutenant on probation who fails to qualify in either of these examinations will be liable to removal from the service, but may be allowed to undergo both courses again, if specially recommended, and should he then qualify in both, he will be placed at the bottom of the list and his commission post-dated. Should he again fail in either examination, his commission will not be confirmed. A Lieutenant on probation specially allowed a second trial will receive no pay in the interval between the first and second periods of instruction.

A Lieutenant on probation who is prevented by sickness from attending the examinations at the conclusion of the courses of instruction may be permitted to go through them again or be granted a special examination. His pay when granted sick leave is governed by paragraph 12.

10. The candidate's commission as Lieutenant will bear the date on which the result of the examination is announced, but his rank will not be gazetted until he has passed the Final Examination, held at the conclusion of his period of instruction.

11. From the day on which the result of the examination is announced, Lieutenants on probation will receive an allowance of 14s. per diem (except under the provisions of paragraphs 12 and 15); and during the period of instruction they will be provided with quarters, or, when quarters are not provided, with the usual allowances of a subaltern in lieu thereof, to cover all costs of maintenance. They will be required to provide themselves with uniform (viz., the regulation undress uniform and the mess dress of a Lieutenant of the Indian Medical Service, as described in Indian Army Regulations, vol. vii., with Sam Browne belt; a detailed list of the articles of uniform required will be sent to the successful candidates).

12. A Lieutenant on probation who is granted sick leave before the completion of his course of instruction and final admission to

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the Service will receive pay at the rate of 10s. 6d. a day for the period of his sick leave (see also paragraph 4 of the attached memorandum).

13. Candidates will be required to conform to such rules of discipline as may from time to time be laid down.

14. A Lieutenant who, within a reasonable period before the date at which he would otherwise sail for India, furnishes proof of his election to a Resident Appointment, or to a preliminary appointment leading in due course to a Resident Appointment at a recognized civil hospital, may be seconded for a period not exceeding one year from the date on which he takes up such appointment, provided that he joins it within three months of passing his Final Examination, and that he holds himself in readiness to sail for India within fourteen days of the termination of the appointment. While seconded he will receive no pay from Indian funds, but his service towards promotion, increase of pay, and pension, will reckon from the date borne on his commission.

In special cases permission may be granted to Lieutenants to delay their departure for India, in order to sit for some further Medical Examination. Lieutenants remaining in England under such circumstances will receive no pay for any period beyond two months from the date of leaving the Royal Army Medical College, unless the period elapsing before the day on which the majority of the Lieutenants of the same seniority sail to India exceeds two months, in which case Lieutenants allowed to remain in England will receive pay up to that day. In such cases pay will recommence on the day of embarkation for India.

All the provisions of this clause are subject to the general exigencies of the Service.

15. Before the commission of a Lieutenant on probation is confirmed, he must be registered under the Medical Acts in force at the time of his appointment.

16. Officers appointed to the Indian Medical Service will be placed on one list, their position on it being determined by the combined results of the Preliminary and Final Examinations. They will be liable for military employment in any part of India; but with a view to future transfers to civil employment, they will stand posted to one of the following civil areas:

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- (1) Madras and Burma.
- (2) Bombay, with Aden.
- (3) Upper Provinces—*i.e.*, United Provinces, Punjab, and Central Provinces.
- (4) Lower Provinces—*i.e.*, Bengal, and Eastern Bengal and Assam.

The allocation of officers to these areas of employment will be determined upon a consideration of all the circumstances, including, as far as possible, the candidate's own wishes.

Officers transferred to civil employment, though ordinarily employed within the area to which they may have been assigned, will remain liable to employment elsewhere, according to the exigencies of the Service.

17. Candidates who have been specially employed in consequence of a national emergency, either as an officer, or in a position usually filled by an officer, will be allowed, under certain circumstances, to reckon such service towards pension.

Examinations for admission to the Service are held twice in the year, usually in January and July.

N.B.—The exact date of the next examination, and the number of appointments, will be notified in the newspapers in due course.

Candidates will be supplied, on application, with copies of the papers set at previous examinations.

POSITION OF OFFICERS IN I.M.S.

Memorandum Regarding the Position of Officers appointed.

1. This memorandum is based upon the Regulations in force at the present time. They are subject to any alterations that may be determined on.

PASSAGE TO INDIA.

2. Officers on appointment are, when possible, provided with passage to India by troop transport; when such accommodation is not available, passage at the public expense is provided by private steamer, or a passage allowance granted if preferred.

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3. Any officer who may neglect or refuse to proceed to India if ordered to do so within two months from the date of terminating his course of instruction, or within fourteen days of the termination of his hospital appointment, if the Secretary of State for India has permitted him to hold one, will be considered as having forfeited his commission, unless special circumstances shall, in the opinion of the Secretary of State in Council, justify a departure from this regulation.

PAY PREVIOUS TO ARRIVAL IN INDIA.

4. The rate of pay drawn by Lieutenants* of the Indian Medical Service previous to arrival in India is laid down in paragraphs 11, 12, and 14 of the Regulations. A Lieutenant who is detained by illness in this country will be paid at the rate of £250 a year from the date on which he would otherwise have embarked until the date of embarkation, and at the rate of 14s. a day during the voyage to India. (For rates subsequent to their landing in India, see paragraphs 16, 17, 18, and 19.)

Pay under the Regulations referred to above is issued in this country up to the date of embarkation, and an advance of two months' pay at the same rate is also made prior to embarkation, which is adjusted in India in accordance with the rate laid down in paragraph 16.

GRADES AND PRECEDENCE.—5. The grades of Officers in the Indian Medical Service are six in number—viz. :

- (1) Surgeon-General (ranking as Major-General).*
- (2) Colonel.
- (3) Lieutenant-Colonel.
- (4) Major.
- (5) Captain.
- (6) Lieutenant.

* The Director-General, Indian Medical Service, will rank either as Major-General or Lieutenant-General, as may be decided in each case by the Secretary of State for India in Council.

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PROMOTION.

6. A Lieutenant's Commission dates from the day on which the result of the examination at which he is admitted is announced.

7. A Lieutenant is promoted to Captain on completion of three years' full-pay* service from date of first commission, but after completing eighteen months' service, and before promotion to the rank of Captain, he will be required to pass an examination in military law and military medical organization, the result of which may affect his promotion.

8. A Captain is promoted to Major on completion of twelve years' full-pay* service, but this promotion is accelerated by six months in the case of officers who fulfil certain specified conditions.

9. A Major is promoted to Lieutenant-Colonel on completion of eight years' full-pay* service in the rank of Major.

10. All promotions from the rank of Lieutenant-Colonel to that of Colonel, and from the rank of Colonel to that of Surgeon-General, are given by selection for ability and merit.

11. On appointment as Honorary Physician or Honorary Surgeon to His Majesty, an officer below the rank of Colonel is promoted to that rank, remaining supernumerary until absorbed.

12. For distinguished service in the field an officer of the Indian Medical Service may receive special promotion.

TENURE OF OFFICE IN ADMINISTRATIVE GRADES.

13. The tenure of office of Surgeon-Generals and Colonels is limited to five years.

14. Colonels, if not disqualified by age, are eligible either for employment for a second tour of duty in the same grade, or for employment in the higher grade of Surgeon-General by promotion thereto.

15. Absence on leave in excess of eight months during a five years' tour of duty involves forfeiture of appointment.

PAY AND ALLOWANCES.†

16. The following are the monthly rates of Indian pay drawn by officers of the Indian Medical Service from the date of their arrival in India :

* See, however, paragraph 41.

† Note to paragraphs 16 to 20.—Under present arrangements, officers of the Indian Medical Service who are not statutory natives

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Rank.	Unemployed Pay.	Grade Pay.	Staff Pay.	In Officiating Medical Charge of a Regiment.	In Permanent Medical Charge of a Regiment (i.e., Grade Pay + Staff Pay).
	Rs.	Rs.	Rs.	Rs.	Rs.
Lieutenant	420	350	150	425	500
Captain	475	400	150	475	550
Captain, after five years' service ...	475	450	150	525	600
Captain, after seven years' service...	—	500	150	575	650
Captain, after ten years' service ...	—	550	150	625	700
Major	—	650	150	725	800
Major, after fifteen years' service ...	—	750	150	825	900
Lieutenant-Colonel	—	900	350	1,075	1,250
Lieutenant-Colonel, after twenty-five years' service ...	—	900	400	1,100	1,300
Lieutenant-Colonel, specially selected for increased pay ...	—	1,000	400	1,200	1,400

NOTES.—(a) Unemployed pay is drawn by officers of less than seven years' service who are not holding officiating or substantive charge of native regiments. Officers of more than seven years' service draw grade pay alone when unemployed. Staff pay is the pay of a command, and is drawn in addition to grade pay.

(b) Horse allowance is granted to officers in charge of cavalry regiments at the rate of 90 rupees a month to Lieutenant-Colonels and Majors, and 60 rupees a month to Captains and Lieutenants.

17. The principal administrative appointments are held by Colonels and Surgeon-Generals on the following consolidated salaries :

Colonel (sixteen, some in civil employ), from 1,800 to 2,500 rupees per mensem.

Surgeon-General, one at 2,200 rupees per mensem.

Surgeon-General, two at 2,500 rupees per mensem.

Surgeon-General (The Director-General I.M.S.), one at 3,000 rupees per mensem.

of India receive exchange compensation allowance, to compensate them for the fall of the value of the rupee. The allowance consists of an addition to their salaries (subject to certain limitations) equal to half the difference between their salaries converted at (1) 1s. 6d. the rupee, and (2) the standard Government rate, which has been fixed at 1s. 4d. the rupee until further notice.

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18. Specialist pay at the rate of 60 rupees a month is granted to officers below the rank of Lieutenant-Colonel who may be appointed to certain posts.

19. No officer, however employed, can draw more than the grade pay of his rank (see paragraph 16) until he has passed the examination in Hindustani known as the "Lower Standard." Failure to pass disqualifies an officer, even when holding such substantive or officiating charges, from receiving any portion of the staff allowance of the appointment.

20. Surgeon-Generals and Colonels, on vacating office at the expiration of five years' tour of duty, are permitted to draw in India an unemployed salary of 1,350 rupees per mensem in the former, and 1,000 rupees in the latter case, for a period of six months from the date of their vacating office, after which they are placed while unemployed on the following scale of pay :

	Surgeon-General.			Colonel.		
	Per Diem.			Per Diem.		
	£	s.	d.	£	s.	d.
After thirty years' service on full pay .	2	5	0	1	14	0
After twenty-five years' service on full pay	2	5	0	1	10	0
After twenty years' service on full pay, or on promotion, should this period of service not be completed ...	...	...	2 0 0	1	8	0

PRIVATE PRACTICE.

21. Except in the administrative grades and in certain special appointments, medical officers are not debarred from taking private practice, so long as it does not interfere with their proper duties.

CIVIL APPOINTMENTS.

22. A large number of posts in civil employ are ordinarily filled up from officers of the Indian Medical Service. Officers are required to perform two years' regimental duty in India before they can be considered eligible for civil employment. The principal appointments, together with the salaries attached to each, are stated in the following table :

An allowance of 100 rupees per mensem is also at present granted, in addition to the above scale, to the Chief Plague Medical Officers in certain provinces.

There are also six Chemical Examiners with 800 to 1,650 rupees per mensem, and a number of Port Health Officers with 750 to

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Description of Appointment.	Approximate Number of Appointments in each Class.	Salary per Mensem.			
		When held by a Lieutenant-Colonel.	When held by a Major.	When held by a Captain.	When held by a Lieutenant.
		Rs.	Rs.	Rs.	Rs.
Inspectors-General of Civil Hospitals ...	6	2,250-2,500	—	—	—
Sanitary Commissioner with Government of India ...	1	2,000-2,500	—	—	—
Inspectors-General of Prisons ...	8	1,500-2,000	—	—	—
Principals of Medical Colleges ...	2	1,650-1,800	1,200-1,300	—	—
Professorial Appointments ...	23	1,500-1,650	1,050-1,150	800-950	750
Sanitary Commissioners ..	6	1,500-1,800	—	—	—
Deputy Sanitary Commissioners ..	13	1,350-1,500	900-1,000	650-800	600
Bacteriological Appointments ..	5	1,500-1,600	1,050-1,150	700-900	650
Superintendents of Central Lunatic Asylums ...	6	1,400-1,550	1,050-1,150	700-900	650
Superintendents of First Class Central Gaols ...	5	1,400-1,550	950-1,050	700-850	650
Superintendents of Second Class Central Gaols ...	5	1,300-1,450	850-950	600-750	550
Civil Surgeoncies (First Class) ...	37	1,300-1,450	850-950	600-750	550
Civil Surgeoncies (Second Class)...	171	1,200-1,350	750-850	500-650	450
Probationary Chemical Examiner	1	—	—	600-750	550

1,950 rupees per mensem. Other appointments of Resident Surgeons and Physicians, at hospitals, etc., are on salaries ranging from 700 to 1,650 rupees per mensem. There are also a certain number of appointments under the Political Department on salaries ranging from 450 to 1,450 per mensem, exclusive of local allowances.

23. Qualified officers of the Medical Service are also eligible for appointments in the Assay and Mint Departments. The salaries of these appointments are from 600 to 2,250 rupees per mensem.

LEAVE RULES.

(Paragraphs 25 (2) to 29 apply only to Officers in Military employ.)

24. Officers of the Indian Medical Service below the rank of Colonel may be granted—

- (1) Privilege leave under such Regulations as may from time to time be in force.
- (2) Leave out of India, for no longer period than one year, capable of extension to two years' absence from duty, on the following pay :

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On first appointment	£250 a year
After the commencement of the tenth year's service for pension	£300 a year
After the commencement of the fifteenth year's service for pension	...	...	...	£450 a year
After the commencement of the twentieth year's service for pension	...	...	...	£600 a year
After the commencement of the twenty-fifth year's service for pension	...	...	...	£700 a year

- (3) Leave in India, but for the period of one year only, on full military pay and half the Staff pay of appointment.

25. No extension of leave involving absence from duty for more than two years, whether taken in or out of India, can be granted except on specially urgent grounds and without pay.

26. An officer unable on account of the state of his health to return to duty within the maximum period of two years' absence, unless he is, under paragraph 25, specially granted an extension of leave without pay, is placed on temporary half-pay or the retired list, as the circumstances of the case may require. An officer is also liable to be placed on half-pay or the retired list should his health require an undue amount of leave, whether in or out of India.

27. Leave may be granted at any time, but solely at the discretion of the civil or military authorities in India under whom an officer may be serving.

28. An officer on leave, whether in India or out of India, is required to rejoin at once on being recalled to duty, unless certified by a Medical Board as unfit to do so.

29. Officers of the Administrative Grades may be granted one period of leave not exceeding eight months during their tenure of appointment.

30. Extra furlough may be granted to officers desirous of pursuing special courses of study at the rate of one month's furlough for each year's service up to twelve months in all.

HONOURS AND REWARDS.

31. Officers of the Indian Medical Service are eligible for the military distinction of the Order of the Bath, and for other orders, British and Indian, and for good service pensions.

Six of the most meritorious officers are named Honorary Physicians, and six are named Honorary Surgeons to His Majesty.

RETIRING PENSIONS AND HALF-PAY.—32. Officers of the Indian Medical Service are allowed to retire on the following scale of pension, on completion of the required periods of service :

					Per Annum.
After 17 years' service for pension					... £300
"	18	"	"	"	... 320
"	19	"	"	"	... 360
"	20	"	"	"	... 400
"	21	"	"	"	... 420
"	22	"	"	"	... 440
"	23	"	"	"	... 460
"	24	"	"	"	... 480
"	25	"	"	"	... 500
"	26	"	"	"	... 540
"	27	"	"	"	... 580
"	27½	"	"	"	... 600
"	28	"	"	"	... 620
♦ "	29	"	"	"	... 660
"	30	"	"	"	... 700

33. Service for pension reckons from date of first commission, and includes all leave taken under the Rules quoted in paragraphs 24 to 30 (see also paragraph 41).

34. A Surgeon-General, after three years' active employment in that appointment, is entitled to retire upon a pension of £350 per annum, in addition to that to which he may be entitled under the above scale.

35. A Colonel is entitled, after three years' active employment in that appointment, to retire upon a pension of £125 per annum, in addition to the pension to which he may be entitled under the above scale, and after five years of such employment on an additional pension of £250 in all.

36. In each of the above cases stated in paragraphs 34 and 35, eight months' absence on leave is allowed to count towards actual service in those grades (see paragraph 30).

37. A Surgeon-General or Colonel who has completed his term

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of service, and has reverted to British pay (see paragraph 20), may reside in Europe, at the same time qualifying for higher pension.

38. With a view to maintain the efficiency of the service, all officers of the rank of Lieutenant-Colonel and Major are placed on the retired list when they have attained the age of fifty-five years; the Director-General, Indian Medical Service, when he has attained the age of sixty-two years; and all other Surgeon-Generals and Colonels when they have attained the age of sixty years. In any special case where it would appear to be for the good of the service that an officer should continue in employment, he may be so continued, subject in each case to the sanction of the Secretary of State for India in Council.

39. Officers placed on temporary or permanent half pay under paragraph 26 are granted half pay at the following rates :

			Rates of Half Pay.					
			Per Diem			Per Annum		
			£	s	d	£	s	d
Under five years' service	..	...	0	6	0	109	10	0
After five years' service	...		0	8	0	146	0	0
After ten years' service	.	..	0	10	0	182	10	0
After fifteen years' service		...	0	13	6	246	7	6
Lieutenant-Colonel, under three years' service as such	...	..	1	0	0	365	0	0
Lieutenant-Colonel, over three years' service as such	...	.	1	7	6	501	17	6

Surgeon-Generals and Colonels, when in circumstances in which other officers would draw half-pay, receive the unemployed pay of their rank (see paragraph 20). Officers cannot retire *in India* on half-pay.

An officer of less than three years' service, although he may be transferred to the half-pay list under the general conditions of

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transfer, will not be granted any half-pay unless his unfitness has been caused by service.

INVALID PENSIONS.

40. An officer who has become incapacitated for further service in India on account of unfitness caused by duty may, after he has been two years on temporary half-pay, be granted an Invalid Pension on the following scale :

			Per Annum.
After sixteen years' pension service	...	...	£272
After fifteen years' pension service	...	...	252
After fourteen years' pension service	...	...	232
After thirteen years' pension service	...	...	212
After twelve years' pension service	...	...	192

41. Time (not exceeding one year) passed on temporary half-pay reckons as service for promotion and pension, in the case of an officer placed on half-pay on account of ill-health, contracted in the performance of duty, military or civil.

42. Officers of the Indian Medical Service are liable, after retirement on pension before completing thirty years' service, to recall to military duty in case of any great emergency arising, up to fifty-five years of age.

WOUND PENSIONS.

43. Officers are entitled to the same allowances on account of wounds received in action and injuries sustained through the performance of military duty, otherwise than in action, as are granted to combatant officers of His Majesty's Indian Military Forces holding the corresponding military rank.

FAMILY PENSIONS.

44. The claims to pension of widows and families of officers are treated under the provisions of such Royal Warrant regulating the grant of pensions to the widows and families of British officers as may be in force at the time being.

45. The widows and families of officers are also entitled to pensions under the Indian Service Family Pension Regulations, and subscription under those Regulations, from the date of arrival in India, is a condition of appointment, except in the case of natives of India, for whom it is optional.

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II. DENTAL SURGEONS

A student is required, before the commencement of his professional education, to pass the same Preliminary Examination as the medical student. We have already given a list of the examinations recognized by the General Medical Council. His aim will now be to secure the diploma of the Licence in Dental Surgery (L.D.S.), and he will pass through the following courses :

1. Two years' instruction in Dental Mechanics under a qualified Dental Surgeon, or in the Mechanical Department of a recognized Dental Hospital.

2. At least two years' Professional and Hospital study, which will include :

- (a) Practical classes and lectures in the Medical School.

- (b) General Hospital Practice.

- (c) Special Dental Lectures and Dental Hospital Practice.

After passing the Preliminary Examination, he will begin his professional studies by becoming apprenticed, on payment of a premium ranging from £50 to £150, to a registered Dental Surgeon ; or he can attend a recognized Dental Hospital. In either case, within fifteen days he should register himself at the office of the General Medical Council, 299, Oxford Street, London, W., as a Dental Student. Before obtaining his L.D.S. he has now three examinations to pass. These are the following :

1. The Preliminary Science Examination, consisting of Part I., Chemistry ; Part II., Physics Both subjects must be passed at the same time.

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The examination is held in January, March (or April), July, and October each year; and candidates must give fourteen days' clear notice of their intention to sit, to F. J. Hallett, Esq., Examination Hall, Victoria Embankment, London, W.C.

The fee for examination is £3 3s. This examination may be taken before entering a Dental School or commencing apprenticeship, or during either of these periods.

Before admission to the Examination, candidates must produce evidence of having received instruction in Chemistry (180 hours) and in Physics (120 hours) at a recognized Institution. These courses need not be completed within one year, nor need they run concurrently.

In view of the above-mentioned conditions it is well for parents to exercise due care with regard to the selection of a school for their sons, and to see that the laboratory equipment of the one they choose is in accordance with the requirements of the General Medical Council.

2. The First Professional Examination. Subjects: Mechanical Dentistry and Dental Metallurgy.

This examination is held in May and November each year, and candidates must give twenty-one days' clear notice of their intention to sit to the same address as in the case of the Preliminary Science Examination.

The candidate must produce evidence that he has spent two years in mechanical training under a Practitioner or in a recognized Dental Hospital; that he has been registered in accordance with the directions given above; and that he has attended in a Dental Hospital or School courses of lectures in specified subjects connected with Dentistry, including Practical Dental Mechanics. The fee for this examination is £2 2s.

3. The Final, or Second Professional Examination, is

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divided into two parts, which may be taken either together or separately.

Part I. comprises General Anatomy, Physiology, General Pathology, and Surgery. Part II. : Dental Anatomy and Physiology, Dental Pathology, and Surgery, and Practical Dental Surgery.

Candidates must give twenty-one days' clear notice of their intention to sit for this examination to the address given above. They must have passed four years in acquiring professional knowledge subsequently to registration, and have attended specified courses of theoretical and practical lectures in subjects connected with their profession at a recognized Dental Hospital and School. The fee for the second Professional Examination is £5 5s. (Part I., £3 3s. ; Part II., £2 2s.). The examination is held in May and November each year. There is a further fee of £10 10s. to be paid before the diploma is granted, the total fees for the L.D.S. thus amounting to £21. The fees for the course of Hospital Study will vary according to the medical school the student joins, and will be found to range from £50 to £170. Among the recognized Dental Schools are those connected with the great London Hospitals, and with the Universities of Manchester, Liverpool, Birmingham, and Bristol.

The Royal Dental Hospital of London and School of Dental Surgery, situated in Leicester Square, is thoroughly equipped, and has some of the foremost Dental Surgeons on the staff. The fees for the two years' instruction in Dental Mechanics and the two years' Hospital Practice and Lectures, as required by the Royal College of Surgeons of England, are £157 10s. Students may attend the whole or any part of the course. There is an entrance scholarship of £50, and two of £25, and also scholarships,

prizes, and research scholarships open to students of the College. Entrance scholarships in Science are offered at the Royal Dental Hospital, and these ought to prove attractive to able boys who are aiming at a thorough training in dentistry. Further particulars may be obtained from the Dean.

The Edinburgh Dental Hospital and School is also well known, and offers great advantages to the intending Dental student. Numerous prizes are competed for annually at this school, and a bursary of one year's free Hospital Practice is awarded to the student who passes the First Professional Examination with the highest marks. Particulars with regard to this Dental school may be obtained upon application to the Dean.

Excellent courses for Dental students are also given at the Universities of Liverpool, Manchester, and Birmingham.

A book of questions set at the examination for the Licence in Dental Surgery for the last few years may be obtained from Messrs. Taylor and Francis, publishers, Red Lion Court, Fleet Street, London, E.C. Price 6d. each year, post free 6½d.

While it is true that the training of the L.D.S. is all that the Dental Surgeon really requires, that the daily work of his profession is chiefly manipulative, and that the best manipulators and mechanics make the most successful Dental Surgeons, yet some students take a wider view of training, and seek in addition to the L.D.S. the double diploma of the Conjoint Board—viz., the L.R.C.P. (Lond.) and M.R.C.S. (Eng.). The inclusive fee at the leading medical schools for this extended and combined course is about 190 guineas. Particulars of several of the institutions where such a course can be pursued are to be found above.

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Prospects.—A well-trained man, who is skilful and has pleasant manners and a sympathetic nature, has very good prospects. An income of £400 to £600 is quite common, while a Surgeon-Dentist with a good-class connection will make £1,000 per annum or more.

III. VETERINARY SURGEONS

The boy who wishes to be a Veterinary Surgeon should have much the same qualifications as the would-be medical man, but, in particular, he should have a natural fondness for animals.

To quote a recent number of *The Veterinary News* : “To become a successful Veterinary Surgeon a natural love for animals and some aptitude for their management and control is essential, and if these are clearly lacking then we have no hesitation in saying that the choice of the veterinary profession will end in something far short of success. On the other hand, given this love of animals, average ability, and a practical desire to succeed, and there are few occupations which can be more interesting and varied. . . . The bulk of the veterinary profession is made up of the private practitioners in town and country, and the majority of those qualifying will no doubt continue to join their ranks. This class of work has suffered much from the motor-car, but other opportunities have opened up, canine practice has grown immensely in importance, and to the well-qualified all-round practitioner there is still open a career of useful work, securing fair remuneration.”

The cost of veterinary education is not great, and a sum of 100 guineas spread over four years—the normal

college course—will cover the fees for tuition and examinations.

The profession is not overcrowded, and it presents an infinite variety of opportunities for research in the problems relating to heredity, parasitology, bacteriology, etc., which should appeal to the scientific student.

Apart from private practice there are many openings for qualified men under Local Government Authorities, and as Inspectors and Assistant-Inspectors under the Board of Agriculture, both in Great Britain and Ireland. The Indian Civil Veterinary Department, and the similar departments in our other dependencies and colonies, have also an ever-increasing number of vacancies.

COURSE OF TRAINING resembles the Medical: the student must have passed a Preliminary Examination recognized by the Council of the Royal College of Veterinary Surgeons, which has the right of granting diplomas in this branch of the profession. He must be sixteen before entering a veterinary college, corresponding to the medical school, and the period of training is four years at least. There are four examinations to pass, one at the end of each year; if a student fails to pass in any one of them, he not only loses time, but must pay a further fee of three guineas for each re-examination. Three failures at any examination forfeit the right of pupilage. Regular attendance at lectures, demonstrations, and class instructions is essential, as a certificate of such attendance is necessary before admission to any examination. The annual course begins in October, and it is advisable to have passed the preliminary so as to commence study at college with the opening of the session.

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The subjects required for the Preliminary Examinations are the same as for the Medical (see pp. 117-118), and, practically, the list of examinations, from which one may choose, is the same. In particular, the examinations of the College of Preceptors, held in London, Birmingham, Bristol, Leeds, Liverpool, and Manchester, and possibly other towns, in March, July, September, and December; and those of the Educational Institute of Scotland, held in Edinburgh, Glasgow, London, Liverpool, and Dublin, in January, April, July, and September, are recommended. Thirty days' notice of intention to sit is required in the case of the College of Preceptors' Examination, for which the fee is £1 5s. Apply to the Secretary, College of Preceptors, Bloomsbury Square, London, W.C., while for the Examination of the Institute five days' notice is required, and the fee, £1, must be sent to D. M. Murray, Esq., 34, North Bridge Street, Edinburgh.

The best-known veterinary colleges are the Royal Veterinary College, Camden Town, London, N.W., and the Royal (Dick) Veterinary College, Edinburgh. What was formerly the New Veterinary College, Edinburgh, has now been transferred to Liverpool, and has been incorporated in the University of Liverpool; for particulars apply to the Registrar. The fees at the London College, over and above the examination fees for the diploma, are an educational or entrance fee of eighty guineas, which covers the four years, and may be paid in four annual instalments of twenty guineas, all in advance, an entrance fee of one guinea, and an annual fee of half a guinea to the library. Should the student, through failing to pass, have to stay beyond the four years, he pays twenty guineas for each year or portion of a year. The members of the college staff are prohibited from conducting private classes, and

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no additional fees are charged for any instruction that may be necessary to supplement the regular course of lectures.

At the Royal (Dick) College, Edinburgh, the fees are somewhat less—viz., a matriculation fee of one guinea, and class fees for all subjects and for the full enjoyment of all the privileges of the college amount to sixty guineas, payable in instalments, also in advance.

The examination fees of the Royal College of Veterinary Surgeons amount to twenty guineas—i.e., £5 for each of the four examinations, and £1 for registration in passing the final.

There are prizes at the veterinary colleges open to competition among the students. The most valuable are at the London College: four “Centenary Prizes” of £20 each given annually to the most efficient student in each of the four stages, various small prizes varying from two to five guineas, and annual exhibitions, of which due notice is given from time to time.

Bursaries equal in amount to the whole or part of the fees and to maintenance allowance are awarded by the Committees on Secondary Education of Counties and certain Burghs of Scotland to students intending to enter on a course of study at the Royal (Dick) Veterinary College who satisfy the Committee that they require such assistance. Students who are eligible are also entitled to claim payment of fees under the Carnegie Trust.

At the close of their final period of study all students from all veterinary colleges in Great Britain may compete for the Fitzwygram Prizes of £50, £30, and £20.

At each college there are also medals given; it is wise to compete for these, for they are valuable recommenda-

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tions to candidates who may seek public posts. The Corporations of large towns, as well as railway companies, have posts for well-qualified Veterinary Surgeons; the Veterinary Surgeon to a large town may receive from £500 to £700 a year with house and the use of two horses. In private practice much depends on the choice of a suitable locality, and, after that, on the Surgeon's own skill and ability.

The Calendars giving full information as to course of study, fees, etc., may be obtained from the Secretary, Royal Veterinary College, Camden Town, London, N.W. ; or the Secretary, Royal (Dick) Veterinary College, Clyde Street, Edinburgh.

ARMY VETERINARY DEPARTMENT.—Valuable posts are open in this department. Candidates for admission must make a written application to the Under-Secretary of State, War Office, London, and a personal interview will be necessary with the Director-General, Army Veterinary Department. Candidates must be between twenty-one and twenty-seven, members of the Royal College of Veterinary Surgeons, unmarried, and in all respects suitable to hold commissions in the Army. They must forward (*a*) a certificate of birth or baptism ; (*b*) testimonials of moral character, and will then be examined by a Board of Army Veterinary Officers. Examinations will be held as vacancies occur, and those who obtain the qualifying number of marks will receive commissions according to the order of merit in which they pass.

The examination will consist of two parts, written and practical.

The substantive ranks of the Officers of the Department are—

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	Pay.
Director-General	£1,200.
Veterinary Colonel	£638.
Veterinary Lieut.-Colonel ...	£456 to £547.
Veterinary Major	£365 to £435.
Veterinary Captain	£282.
Veterinary Lieutenant ...	£250 on Appointment.

On retirement, Officers are granted adequate pensions (see also p. 31).

VI

THE LAW

I. THE BAR

QUALIFICATIONS.—In no other learned profession is competition so keen as at the Bar, for the lucrative incomes and splendid appointments attainable in or through the profession attract not only a large number of men, but a large number distinctly above the average in ability. The Bar, therefore, is not the profession for the student of average qualities, but for the man of exceptional power and fixed determination to succeed, who is also sufficiently equipped with other means to enable him to live without earning anything at the Bar for some years after having been actually called. He must possess fluency of speech, insight, a sound grasp of Law, and a wide knowledge of human nature. Above all, he must have the power of getting up a new subject rapidly. A Barrister may at any time be called upon to discuss the details of almost any art or science. One day he may be engaged on a case of poisoning, where he must speak at length on the comparative effects of various poisons on men and on rabbits; the next day he may have to give reasons for believing that handwriting experts are or are not capable of proving the authorship of a forged cheque; and the day after one

may find him busy with a libel case, showing how far it is actionable to print the name of a prima-donna in small letters on a concert poster. He must also have a strong constitution, if he is to stand any chance of enduring the wear and tear of a successful Barrister's life. Lord Eldon is said to have named the two requisites for success at the Bar in the words: "Live like a hermit and work like a horse." And a Barrister in active work must be prepared to spend most of his day, from 9 a.m. to 6.30 p.m., either in Court or in his Chambers, and then to carry home with him, for after-dinner perusal, briefs enough to occupy him for several hours more—and that not for one day only, but for a whole session. And, lastly, he must have tact and self-restraint enough to make him keep a client from going to law, even though he loses fees thereby. This is a hard saying for those who are still in their early struggles: but it pays in the end. "Be moderate," said Justice Biggam—"be moderate and careful, and do nothing which can be construed into having been done in the interests of yourself. The man who keeps a client out of litigation is the man who in the long run is successful."

Although no University qualification is actually requisite for admission to membership of, or "Call" to, the Bar, special privileges and exemptions are granted to University men, and there cannot be any doubt as to the desirability of studying at some University previous to Call. Many distinguished Lawyers have been educated at either the Scotch or Welsh or Irish Universities; but the greatest advantages for the student's subsequent career as a Barrister are undoubtedly offered by the Universities of Oxford and Cambridge.*

* For an estimate of the expenses at Oxford and Cambridge see p. 3.

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Various Scholarships and Prizes for Law are given at Oxford and Cambridge, and excellent opportunities are afforded for training in the art of public speaking in the debating societies and clubs and at the Oxford and Cambridge Union Societies.

The Bar student who cannot secure the benefit of a course at either Oxford or Cambridge would be well advised to join University College or King's College, London, and study for the LL.B. Degree at London University.

ADMISSION TO THE BAR—Necessary Steps to be taken.
—The Council of Legal Education, 15, Old Square, Lincoln's Inn, W.C., have issued new Regulations as to the admission of students to the four Inns of Court. The Preliminary Examination formerly required has been discontinued since October 1, 1910, when the new Regulations came into force. In its place, persons applying for admission as students must have passed one or other of the following examinations enumerated in a Schedule attached to the Regulations :

1. Any examination held by any University in the British dominions, approved by the Council of Legal Education, which entitles those who pass it to a Degree of that University.

2. Any examination which entitles those who pass it to enter the Indian Civil Service or the Consular Service, or to a Commission in the Army or Navy, or to an Eastern Cadetship.

3. The Responsions Examination in stated subjects of the University of Oxford.

4. The Previous Examination of the University of Cambridge (Parts I. and II.).

5. The Matriculation Examination of the Universities

of London, Liverpool, Manchester, Leeds, Sheffield, Wales, Birmingham, Bristol ; of the National University of Ireland, Queen's College, Belfast, and Queen's University, Belfast.

6. The Matriculation Examination of the University of Durham required in the various faculties other than music.

7. The Senior Grade Examination of the Intermediate Education Board for Ireland.

8. The Qualifying Examination of the Royal Military College, Sandhurst, and of the Royal Military Academy, Woolwich.

9. The Preliminary Examination for the Degree of M.A. of the Universities of Edinburgh, Glasgow, St. Andrews, and Aberdeen.

10. The Principal or Ordinary Entrance Examination of the University of Dublin.

11. The Oxford Senior Local Examination.

12. The Cambridge Senior Local Examination.

[In the cases of 11 and 12 the Certificate must state that the student has passed in (i.) English Language and Literature ; (ii.) Latin.]

13. The Examination for the School Certificate held by the Oxford and Cambridge Schools Examination Board, and the Examination for the Higher Certificate held by the same Board.

14. The School Examination (Matriculation Standard) of the University of London.

15 The Matriculation Examination of the University of the Cape of Good Hope, subject to English being one of the subjects in which the candidate has passed.

CERTIFICATES.—Every applicant for admission must procure from the Inn of Court a form of admission, which he must present duly completed. He must declare that

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FEES, ETC., ON ADMISSION TO AN INN.

Twelve Terms have to be kept at one of the Inns, and the Payments at each vary as follows :

FEES, ETC.	THE INNER TEMPLE.	MIDDLE TEMPLE.	LINCOLN'S INN.	GRAY'S INN.
Stamps and Fees	£41 17s. 3d.	£41 8s. 6d.	£40.	£40.
Deposit ...	£100—returnable without interest on Call, Death, or Withdrawal.	£100—returnable as aforesaid.	£50—returnable as aforesaid.	£50.
Keeping Term ...	£1 2s. each Term.	10s. each Term.	£1 2s. 6d. each Term.	3s. 6d. per dinner.
Students Dues ...	6s. 3d. each Term.	Dinners, 2s. each; Ann. Duty, £1.	5s. per Term.	—
On Call ...	£99 10s.	£99 10s.	£94.	£90.
Bond ...	£50—with two Sureties for payment of Dues, or further deposit of £50 required.	—	—	—
Exemptions from Deposit ...	Members of the Scotch and Irish Bars, the Universities of Oxford, Cambridge, Dublin, London, Durham, National University of Ireland, the Universities of Leeds, Liverpool, Birmingham, Wales, Ireland, or the Victoria University of Manchester, are not required to make a deposit, provided that before Call they take a Degree or produce a Certificate of having kept two years' Terms at such University.	On execution of Bond for £100—in case of Members of Scotch or Irish Bars and Scotch and other Universities in same manner as Inner Temple. NOTE.—Every student has the choice of giving Sureties or paying the deposit.	On execution of Bond for £50—similar to Middle Temple, except that they are not obliged before Call to take a Degree or produce a Certificate of having kept two years' Terms at their University.	On execution of Bond for £50, with two Sureties.
Total Cost of Call to Bar ...	£158 6s. 3d.	Including 72 dinners, £157 2s. 6d. University men, including 36 dinners, £154 11s. 6d.	£157 10s.	£142 12s. University men (36 dinners only) £136 6s.

he is unconnected with the Law or with certain other occupations. He must also obtain two Certificates, each signed by a responsible person who has known him personally for one year or upwards, and has had opportunities of judging his character, testifying to the applicant's respectability and fitness for admission to the Inn.

KEEPING TERMS.—Upon admission to an Inn a student can use the Library of the Inn and the Common or Reading Rooms. He must keep twelve terms before Call by dining in the Hall six nights during each term ; exception is made in the case of students of Universities above mentioned, who can keep their terms by dining three nights only each term. The terms vary in length from three to four weeks, and are called Hilary, Easter, Trinity, and Michaelmas respectively. Dispensations from keeping two terms, but not more, may be granted by the Benchers of an Inn to a student who has gained a Studentship or Certificate of Honour in examinations.

EXAMINATIONS.—The examinations are held in one or other of the Inns of Court four times a year, and may be taken singly or together. The Bar Examination consists of two parts, and no student will receive a Certificate of fitness for Call unless he has passed in both parts. Every student must satisfy the Examiners in each of the subjects :

PART I. :

1. ROMAN LAW.
2. CONSTITUTIONAL LAW (English and Colonial), and LEGAL HISTORY.
3. CRIMINAL LAW AND PROCEDURE.
Every student must also satisfy the Examiners in one of the subjects :
4. REAL PROPERTY AND CONVEYANCING, or HINDU AND MOHAMMEDAN LAW, or ROMAN-DUTCH LAW.

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PART II.—*The Final Examination :*

Every student will be examined in the same subjects. Four papers will be set :

- (a) IN COMMON LAW.
- (b) IN EQUITY.
- (c) LAW OF EVIDENCE AND CIVIL PROCEDURE.
- (d) A GENERAL PAPER on all the above subjects.

Every student must present himself for these four papers at the same examination.

A student may present himself in all or any of the subjects, 1, 2, 3, 4, of Part I. of the Bar Examination at any time after admission, but, without the special leave of the Council, no student shall present himself for Part II. unless he has kept six terms. No student will be allowed to pass in Part II. of the Bar Examination unless he has previously, or at the same examination, satisfied the Examiners in all four subjects of Part I. But if a student takes up any subject of Part I. at the same time as Part II. and fails in Part II., he will nevertheless be allowed to pass in any subject of Part I. in which he has satisfied the Examiners. Lectures on all the subjects are given at the Inns of Court, and in most cases the Lecturers are also the Examiners.

The standard of the examinations in Parts I. and II. is not high, and need present no difficulties to the average University Pass man. It is generally supposed that 40 per cent. of full marks will obtain a third class, 60 per cent. a second class, and 75-80 per cent. a first class.

The rules, subjects, and time-table are published some months before each examination. The only exemption allowed by the Council from any part of the examination qualifying for Call is that of accepting, as an equivalent

for the examination in Roman Law, a Degree granted by any University within the British Dominions, for which the qualifying examination included Roman Law, or a Certificate that the student has passed such an examination, though he may not have taken the Degree for which such examination qualifies him, provided that the Council is satisfied that the student, before he obtained his Degree or such Certificate, passed a sufficient examination in Roman Law.

It is possible for a student who is really in earnest, and attends lectures and classes properly, to pass all the examinations after two years' study.

SCHOLARSHIPS AND PRIZES.—A Studentship of 100 guineas a year, tenable for three years, is offered at the Hilary and Trinity examinations each year to the student under twenty-five years of age who passes the best examination in Part II. and obtains a Certificate of Honour, and special prizes of £50 each are awarded at the Easter and Michaelmas examinations to students who pass the best examinations in subjects 2 and 3 of Part I.

Various other Prizes and Scholarships are also awarded annually to students at the several Inns.

CALL TO THE BAR.—Having kept all the necessary terms, having obtained from the Council of Legal Education a Certificate of his fitness to be called, and having attained the age of twenty-one years, the student can be called to the Bar.

READING IN CHAMBERS.—Reading in Chambers is not now a necessary preliminary to being called to the Bar, but it is to all intents and purposes essential for the Barrister who intends to practise, and at least two years

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should, if possible, be devoted to this method of gaining practical experience. The fees payable to Counsel for reading with him are at the rate of 100 guineas a year. It is not advisable to begin before passing all the examinations, and it is best to be called to the Bar not much before or after the beginning of the last year of reading in Chambers.

POSSIBLE EMOLUMENTS.—The largest individual incomes are made by King's Counsel practising at the Parliamentary and Common Law Bars, and some of these incomes have been known to run into tens of thousands.

The Lord Chancellor has an income of £10,000 while in office, and £6,000 when out; the Lord Chief Justice, £8,000; the Master of the Rolls and Judges in the House of Lords, £6,000 each; and Judges of the Supreme Court, £5,000 each; the Attorney-General, £7,000 and fees; and the Solicitor-General, £6,000 and fees. The fees in each of the two latter cases have been over £3,000 in one year, and yet one of these offices has been declined by an eminent advocate because it would entail a considerable loss in income! These high judicial appointments are, however, only open to those who attain the front rank in their profession.

To those with social or political influence numerous other official appointments are open, amongst which may be mentioned County Court Judgeships, Judgeships of the London City Courts, Stipendiary Magistracies, Recorder-ships, Judgeships and Appointments in the Colonies. India offers many advantages to a Barrister with some little capital at command, as a good practice may be worked up there, leading to appointments as Judges of

the small courts. Government work is also open to Barristers there, which will not interfere with private practice, and may easily be followed by a well-paid Government appointment and an excellent pension.

There is, in fact, no other profession in which an able man, well backed by Solicitors or influential friends, can so soon make a large income. It is equally true that there is no other profession in which real unassisted merit meets so often with tardy recognition. Even those who have afterwards become famous and earned large fortunes, have confessed that during their first year their income was hardly large enough to pay their clerk. Lord Selborne has left it on record that he started on his road to the Woolsack by taking £26 during his first eighteen months; Lord Mersey made no more than seven guineas in his first year. Consequently the Barrister who has no such influence must either be able to make some money by literary work, etc., or have private means to keep him during the years he may have to wait for recognition.

The income of a Junior Barrister in the front rank at any of the various Bars runs into at least four figures, and may probably rise to several thousands, but it is only the more fortunate Barristers who can attain to the front rank within the first ten years after Call, and, if a man fails to attain it within twenty years, his chances of ever doing so are very remote. It is quite possible, however, for him to make a very fair income as compared with other professions without ever reaching the front rank.

Once called to the Bar, a Barrister is free to practise in any Court; but many find it convenient to specialize more or less. The subject in which they specialize is sometimes

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determined by inclination, sometimes by influence, sometimes by the mere chance of winning a verdict which happens to catch the eye of the Solicitors. One man will be famous for defending in Criminal cases; another will find his work more in Probate or Divorce; a third will be a recognized authority on Marine Insurance. In most cases a student should not think of specializing till some time after he has begun to get briefs: but those who have a strong natural taste for mathematics, mechanics, or natural science will often find it advantageous to devote themselves peculiarly to Patent Law.

II. SOLICITORS

The fact that the practice of Solicitors, unlike that of the Bar, is to be found all over the kingdom, and not merely round the important centres of administration of law and justice, tends to place opportunities more readily within the reach of a young Solicitor than is usually the case with a young Barrister, who has to make his way in the world unaided by any special influence or help.

It is generally stated that the profession is overcrowded; certainly its numbers are increasing; and there is absolutely no doubt that, in the case of a young Solicitor starting without any business connection or influence, much patience and perseverance will be necessary before he can build up a really good practice for himself.

QUALIFICATIONS.—One of the most important requirements for the student intending to adopt this profession is that of a good memory, for the voluminous works to be mastered require close and persevering study,

and the examinations to be passed, particularly the final examination, are certainly not easy.

A good memory, a clear head, a persuasive manner, fluency of speech, caution, tenacity, knowledge of human nature—these are some of the qualities that go to make the successful Solicitor. He must, of course, know Law; but he must know many things in addition to Law. Sir Edward Carson, then Solicitor-General, speaking in Leeds a few years ago, at the annual dinner of the Law Students' Society, remarked that he might be expected to say that, above all things, they should study Law; in a somewhat modified fashionable phrase, that they should "think legally." But he took a different view of the profession. If there was anything in the world he truly hated it was the man who was merely a professional man. There was nothing he more disliked than the man who had become a specialist, whether he was a theologian, a doctor, a barrister, or a solicitor. He did not believe that the real road to success was by a mere study of Law, or by being merely lawyers. "Recollect," he proceeded, "I am not in the least attempting to lay down that the lawyer should be a man who knows no law. What I desire to say is, that in all the professions there is a great tendency to specialize, and I think there is far more to be gained by young men, having once attained a sufficient knowledge of law and legal procedure, applying themselves to wider studies—the studies not merely of history, of literature, and of affairs, but, above all things, the study of human nature." And, more recently, the late Lord Gorell, at a dinner of the Birmingham Law Students' Society, after advising his hearers to get a good grip of commerce from the point of view of book-keeping, added: "It is not merely brains that make a successful lawyer. If a man

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looks forward to standing at the top of his profession, he must have character, which means honesty, trustworthiness, and the capacity to give the right advice."

The question whether a University education is, or is not, such a help to advancement in the profession as to justify the additional cost (which in the case of an Oxford or Cambridge course would be from £400 to £700) is much disputed. A University Degree is certainly not an essential preliminary to the profession, and there are solicitors who maintain that the advantages it brings do not justify the time and money which it costs. Yet it is fair to add that the Law Society issue a circular recommending it strongly, and urging headmasters to take steps that pupils who intend to become Solicitors may pass a Matriculation Examination before they leave school. Of course, Oxford or Cambridge offer the widest social advantages; on the other hand, an Arts Degree of one of the younger Universities will enable the student to proceed to a Degree in Law, for which, in the case of London University, he may study without in the least neglecting professional duties.

COURSE OF TRAINING.—The Preliminary Examination should be passed before a lad leaves school. It is held at the Incorporated Law Society's Hall, Chancery Lane, London, and at various prominent centres, such as Bristol, Birmingham, Leeds, Liverpool, Manchester, and Newcastle-on-Tyne (and may also be held in other towns), in the months of February, May, July, and October in each year. Thirty days' previous notice must be sent to the Secretary, the Law Society, Chancery Lane, London, W.C., together with the examination fee of £4. Candidates who fail pay a fee of £2 for any subsequent renewal notice.

The *Preliminary Examination* consists of—

1. WRITING FROM DICTATION.
2. WRITING A SHORT ENGLISH COMPOSITION.
3. (a) Arithmetic. (b) Algebra up to and including Simple Equations; and Elementary Geometry as treated in *Euclid*, Books I. to IV. Proofs other than *Euclid's* will be accepted, and simple riders will be set.

NOTE.—Algebra and Elementary Geometry are not compulsory, but if they are taken up only one language in No. 6 is required instead of two.

4. GEOGRAPHY OF EUROPE AND HISTORY OF ENGLAND.
5. LATIN, ELEMENTARY.
6. Any two of the following languages selected by the Candidate: Latin (translation), Ancient Greek, French, German, Spanish, Italian.

No list of books is issued, but passages are given for translation at sight, without the assistance of a dictionary.

The following are exempt from the Preliminary Examination :

BACHELORS OF ARTS or BACHELORS OF LAWS at the following Universities: Oxford, Cambridge, Dublin, Durham, London, Wales, Liverpool, Leeds, National University of Ireland, Queen's University of Belfast, and Victoria University of Manchester.

BACHELORS OF ARTS, MASTERS OF ARTS, BACHELORS OF LAWS, or DOCTORS OF LAW in any of the Universities of Scotland, none of such Degrees being Honorary.

UTTER BARRISTERS in England.

PERSONS WHO HAVE PASSED THE FOLLOWING EXAMINATIONS, no special subjects being necessary :

First Public Examination before Moderators at Oxford.

Previous Examination at Cambridge.

Examination in Arts for the second year at Durham.

Local Examination, Oxford (Junior or Senior).

Local (non-gremial) Examination, Cambridge (Junior or Senior).

Examination of the Oxford and Cambridge Schools Examination Board (Higher Certificate).

Matriculation Examination at Dublin or London (not necessarily in First Division).

Examination for First Class Certificate of the College of Preceptors.

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And subject to the conditions set out below,* THE FOLLOWING EXAMINATIONS ALSO EXEMPT :

Senior or Junior School Examination of the University of London.

The Matriculation Examination of the Joint Board of the Universities of Manchester, Liverpool, Leeds, and Sheffield, and the Senior School Certificate of the Board.

The Matriculation or Entrance Examination of the University of Birmingham, and the School-leaving Examination (Senior Certificate) of that University.

The Matriculation Examination of the University of Wales, or of the University of Bristol.

The Examination for the Senior Certificate of the Central Welsh Board under the Welsh Intermediate Education Act, 1889.

The Responsions Examination at St. David's College, Lampeter.

The Local Examination at the University of Durham, Senior Pass Certificate, and the Junior Certificate, with at least Second Class Honours.

The Responsions Examination at Oxford.

School Certificate Examination of the Oxford and Cambridge Schools Examination Board.

The Preliminary Examination in Jurisprudence at Oxford.

London University Junior School examination.

All persons who have obtained Certificates of having passed the Preliminary Examination, or are exempt therefrom, may enter into Articles of Clerkship.

All persons exempted from the Preliminary Examination pay an additional £2 on giving notice for the Intermediate Examination (Judges' Order, June 28, 1904).

ARTICLES OF CLERKSHIPS.—The ordinary period of service is five years, but is reduced to three years for Univer-

* (a) Latin shall be one of the subjects taken, and if Latin is not a compulsory subject, the Examination Certificate shall state that the candidate has passed in Latin.

(b) All the subjects required to be taken by a candidate shall be taken at one examination, and the Examination Certificate shall state that they have been so taken.

(c) If any alteration be made in the regulations, character, or standard of an examination, this Order shall immediately thereupon cease to apply to such examination.

sity Graduates (excepting those of the National University of Ireland and the Queen's University, Belfast), and Barristers of less than five years' standing, and to four years for persons who have passed the following examinations : Moderations at Oxford, Previous Examination at Cambridge, Examination in Arts for second year at Durham, Entrance Examination at Dublin (having passed in Honours), Matriculation or Entrance Examination at London or Birmingham Universities, University of Wales (First Division), Responsions at Lampeter, Examination of Joint Matriculation Board of the Universities of Manchester, Liverpool, Leeds, and Sheffield (First Division), Senior School Examination of the University of London (Honours Division), Responsions at Oxford, the Preliminary Examination in Jurisprudence at Oxford.

Persons who have, before entering into Articles, attended for one year the curriculum of study at the Law Society, approved by the Council, and have passed an examination therein to the satisfaction of the Council, need serve only four years.

Articled Clerks bound for four or five years may serve one year with the London Agent and one year with a Barrister or Special Pleader. Those bound for three years may serve one year with the London Agent, but they cannot serve any part of the term with a Barrister or Special Pleader.

No person can be admitted as a Solicitor before he is twenty-one years of age, and sixteen is therefore the earliest age for entering into Articles of Clerkship.

The stamp duty on Articles is £80, and they must be enrolled and registered with the Registrar (Registration fee 5s.) within six months after execution.

In the event of the Solicitor becoming bankrupt, in-

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solvent, being imprisoned, dying, or leaving off practice during the period of Articles, provision is made by statute for their transfer and continuity.

The most expensive item in the process of becoming a Solicitor is the premium payable upon Articles. This varies from £300 in the best offices in large towns to £100 in the small country towns. No Solicitor may have more than two Articled Clerks at the same time. The greatest possible care should be taken in selecting the office in which Articles are to be served, as the future career of a Solicitor, who intends to take a managing clerkship or other appointment, depends to a very large extent on his having served his Articles with a Solicitor or firm of good standing and substantial practice.

Firms sometimes adopt a particular branch of work as a speciality, such as Public Companies, Commercial Life, Admiralty Work, Criminal or Divorce Business, Patents, Licensing Law, or Parliamentary work, but broadly speaking, Solicitors are the general practitioners of the legal profession, and it is always better to be articled to a Solicitor or firm with a good general practice rather than to specialize in one particular branch, unless the Clerk has some definite prospect in that particular line.

A very considerable portion of the period of service will be spent in doing office-work, the larger part of which will seem humdrum, and will involve much dull routine, which will be trying even to the man who has the capacity for taking pains, and will demand from him much patience and perseverance.

INTERMEDIATE EXAMINATION.—This examination is held four times a year at the Hall of the Law Society, Chancery Lane, London—January, March, June, and

THE LAW [INTERMEDIATE EXAMINATION

November—and a fee of £6 is payable on giving notice to compete. The works selected are: Stephen's *Commentaries on the Laws of England*, fifteenth edition (for the year 1915, the sixteenth edition), Chandler's *Book-keeping, Trust Accounts* (second edition), and Hughes Onslow's *Lawyer's Manual of Book-keeping* (second edition). An Articled Clerk may present himself for the complete examination, or either portion—*i.e.*, Law or Trust Accounts and Book-keeping—separately, at any time after the expiration of the first year of service, but if a year after half the term of his articles he has not yet passed the Intermediate Examination, his final examination may be correspondingly postponed. Thirty days' notice must be given to the Secretary of the Law Society that he intends to sit for the examination.

In the event of failure in the whole or either portion of the examination, a fee of £3 will be payable on a renewed notice.

Graduates in Law of Oxford, Cambridge, London, Dublin, Durham, Birmingham, Manchester, Leeds, Liverpool, Sheffield, and the University of Wales, and all who have taken Honours in Jurisprudence at Oxford or Law Tripos at Cambridge, are exempt from the Law portion of this examination; and Barristers of five years' standing are exempt from the whole examination.

This examination should be passed by any student of average ability by reading two or three hours a day for a period of from four to six months, with the knowledge he has acquired in the course of his office work.

SERVICE IN LONDON.—In order that the Articled Clerk may be thoroughly familiar with the practice of the High Court, it is usual for those articled in the country

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to serve one year, if possible, in the office of the London Agent, and it is advisable for this to be spent after, rather than before, passing the Intermediate Examination; for the more advanced a man is in legal knowledge, the more beneficial will be the experience gained in a big London office.

FINAL EXAMINATION.—Final Examinations are held each year in January, March or April, June, and October or November, at the Hall of the Law Society, Chancery Lane, London. Candidates whose Articles expire between January 10 and April 15 may sit at the January examination, between April 14 and May 22 at the April examination, between May 21 and November 2 at the June examination, and between November 1 and January 11 at the November examination. Candidates cannot be examined earlier than these dates, but may sit at any later date. Forty-two days' notice must be given of intention to sit.

The fee payable is £10, and for a renewed notice, £5.

The subjects for the Final Examination are—

1. The Principles of the Law of Real and Personal Property, and the Practice of Conveyancing.
2. The Principles of Law and Procedure in Chancery matters.
3. The Principles of Law and Procedure in King's Bench matters, and the Law and Practice of Bankruptcy.
4. The Principles of Law and Procedure in Probate, Divorce, and Admiralty matters, Ecclesiastical and Criminal Law and Practice, and proceedings before Justices of the Peace.

The Final Examination is a stiff one, but can be passed by a candidate on his own reading.

There is a Voluntary Honours Examination in the same week as the Final Examination. An extra fee of £1 is payable.

STUDENTSHIPS.—The Law Society have recently founded Studentships to be held by intending Solicitors on condition of pursuing a course of study approved by its Council.

One or more Studentships of the value of not less than £40 per annum, tenable for three years, will be awarded at the discretion of the Council in June, 1914, limited to candidates who shall have passed the Preliminary Examination in May, July, or October, 1913, or in February, 1914, and who are otherwise qualified, and shall have been certified by the Examiners to have passed with distinction.

The awards will be made after a subsequent optional examination of the qualified candidates.

Copies of the Regulations can be obtained from the office of the Law Society, 113, Chancery Lane, W.C.

There are also various Prizes and Scholarships in connection with the Honours Examination.

FEES PAYABLE AFTER PASSING FINAL EXAMINATION.—After passing the Final Examination, an Admission Certificate bearing a revenue stamp of £25 must be left at the Society's Offices with the Final Examination Certificate, the Articles of Clerkship, and a fee of £5 payable to the Society. The Certificate is forwarded to the Master of the Rolls, and the applicant's name is then entered upon the Roll of Solicitors

Before commencing to practice a Solicitor must take out a Certificate, and this must be renewed every year. The fees payable are—

For practice within 10 miles of the G.P.O., London ...	{ £4 10s per annum for first three years.
	{ £9 per annum afterwards.
For practice outside that radius	{ £3 per annum for first three years.
	{ £6 per annum afterwards

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POSSIBLE EMOLUMENTS.—The young Solicitor, who is not fortunate enough to have a partnership or practice to step into after admission, usually endeavours to obtain a post as managing clerk to some Solicitor or firm of Solicitors. The salaries vary from £100 or £150, rising to £300 or £400 a year, and, in a few big firms, they may ultimately reach £600 to £800 a year.

Very valuable experience is gained by having the management of a business under supervision with a salary which is net income, rather than having to provide offices, clerks, etc., which may take all the professional earnings for some years. Such a position may also lead to a partnership or public appointment.

A business connection and a certain amount of capital are necessary to enable a Solicitor to set up on his own account, if he is to make an income at his profession from the start. Without such business connection a considerable amount of hard work, time, and money will have to be expended before a satisfactory practice can be built up.

Partnerships and practices are often advertised for sale, but it is seldom that a really sound practice, or share of one, can be procured by a mere money payment.

There are numerous public appointments open to Solicitors, such as those of Solicitor to the Government Departments, Master of the Chancery Division, Taxing Master, Chancery Registrar, District Registrar, County Court Registrar, Town Clerk, Clerk of the Peace, Clerk to the County Council, Magistrates' Clerk, Clerk to Guardians, Vestry Clerk, etc. Previous experience is necessary for most of these offices, and can best be gained by serving Articles with a Solicitor holding one of such offices, or by being a clerk in such an office, for in

most cases special training in that particular branch is essential.

The average professional income of a Solicitor in good practice may reach the substantial sum of £1,500, or even £2,000, in a few years, but large incomes derived from practice are the exception and not the rule, and it is only in the most important firms that they rise to what may be considered the maximum of about £5,000 per annum.

VII

THE CIVIL SERVICE

INTRODUCTORY.—The Civil Service offers a wide variety of employment. In its higher departments, viz., Clerkships (Class I.), Indian Civil Service, Eastern Cadetships, and the three other Indian Services—Police, Forest, and Public Works—it especially appeals to University and Public Schoolmen; in its subordinate departments, viz., the Second Division Clerkships, it also demands from all intending candidates a sound and thorough education. In the higher branches there is ample scope for individuality and initiative and administrative ability, for a great Proconsul like Lord Cromer was a Civil Servant. In the less onerous departments there is an assured increasing income, and the certainty of a pension, the intellectual demand, although thorough, is not severe, while quiet, steady work is certain of its reward. These are the advantages to which the successful candidate may look forward: on the other hand, these subordinate departments of the Service do not offer the same chances of a great position or of a big income as are offered in the more hazardous fields of commerce or professional life. It is true that Second Division Clerks may succeed, by merit, in obtaining First Division Clerkships. The barrier between the two Divisions is not nearly so impassable as it once was. Many such

THE CIVIL SERVICE [INTRODUCTORY

promotions have been made, and it is probable that they will become more numerous in future.

Practically speaking, all appointments have been in the past open to competition, either open or limited; the exceptions are those known as nomination appointments, which consist mainly of Clerkships in the Houses of Parliament, Assistantships in the British Museum, and Foreign Office Clerkships, and the Inspectorships under the Boards of Education for England, Scotland, and Ireland, for all of which influence is necessary to obtain a nomination. There are also a number of appointments—many very valuable—which are filled by the Civil Service Commissioners, wholly or partially without examination, on evidence satisfactory to them that the candidate possesses the requisite qualifications. For a list of such appointments Section II. (a) (b) and (c) of the *Civil Service Year-Book* should be consulted.

On March 18, 1912, a Royal Commission was appointed to inquire into the general methods of appointing Civil Servants, etc.

The Report of the Commission has now been issued, and it will be convenient here to give some account of the conclusions at which the Commissioners arrived, in so far as they concern the methods of recruiting for the Civil Service.

In the first place, the Commissioners consider that the "division of labour" should be a fundamental principle, and that therefore officers required for varying types of work should be selected accordingly—not that there should be a common form of entry to the whole service. They notice that ages and subjects do not always conform to natural stages of education, and with this in view they recommend that the present grades and their examinations should be adjusted in subject-matter and age to suit the existing educational system. In their own words, they would "gather the natural fruits of the educational system in stages as they mature." To secure this they suggest three kinds of examination: for boys about sixteen, for boys about eighteen, and for young men of twenty-two or over.

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As regards the system of recruiting by examination, the Commission, while quite aware of its faults, are still convinced that—wisely used—it is the least open to abuse, and has justified itself by its result. In order to secure a due supply of the best intellect for the service of the State, they recommend the improvement of the “educational ladder,” to make progress easier from bottom to top, and in like manner that there should be adequate facilities for the lower grades of Civil Servants to rise to the upper grades on proved merit.

The Commissioners pass on to recommend drastic changes in the present grading. They would abolish Boy Clerks, Assistant Clerks, Intermediate Appointments, and Second Division Clerks, and substitute for these a Junior Clerical Class at age sixteen, and a Senior Clerical Class at age eighteen, retaining the old Class I. at the top under the name of the “Administrative Class.”

The Commissioners do not desire to alter the existing standard for Class I., the Higher Division. They would rather retain and extend it. They see quite clearly the heavy demands which the complexity of modern legislation makes upon those who have to administer it, and they are firm in their belief in the value of a University education. They would do nothing to lower the standard of the service, but would prefer to increase the facilities for a poor man's son to obtain a University education. At the same time they do not consider that the present examination is in any way perfect, but recommend that it should be overhauled by a Committee, the Civil Service Commissioners and the Treasury working with the heads of our educational departments. The salaries of this class in the several departments should be standardized.

The Commissioners consider that, when outside appointments are made, the Minister should at once lay before Parliament a minute stating the name, qualifications, and previous career of the person so appointed.

As regards Departmental appointments, the Commissioners think that although separate examinations are required for such posts, there are too many of them: those of a kindred nature might well be grouped, and brought into harmony with the general and technical education existing. They consider that personal selection should be abolished, so that “limited competitions” would disappear.

There remain the Professional and Technical posts, most of which require men of maturer years, already skilled in their professions. While a man up to, say, the age of twenty-seven may be regarded as “examinable,” and might possibly be chosen by that process, the

THE CIVIL SERVICE [MAIN DIVISIONS]

Commissioners think that candidates above that age must be recruited by some process of selection on their record of achievement and their personal qualities. But to check the evils of patronage, they would like to have full publicity in announcing vacancies of this kind, and to see the selection made by a Committee, and not by an individual, although of course the Minister would still remain responsible for his choice.

After this sketch of the service as it might be, we may resume our account of the service as it is.

By the Superannuation Act of 1909 every civil servant will receive on retiring after a minimum of ten years' service a pension equal to one-eightieth instead of one-sixtieth as heretofore of his annual salary at date of retirement, multiplied by the number of years of completed service. Provided that, if he has not been receiving pay at the rate of his last year's salary for a period of three years, the basis of the pension will be the average salary of the last three years.

In addition to the above pension a lump sum is granted equal to one-thirtieth of his last year's salary multiplied by the number of years of completed service, such sum not to exceed one-and-a-half times the amount of the year's salary. The sum may be also granted to civil servants retiring after not less than two years' service, who may not be entitled to the pension mentioned above.

If a male civil servant dies in the service after five years or more in its employ, a gratuity of one year's salary is granted to his legal personal representative.

MAIN DIVISIONS OF THE SERVICE.

First Division (or Class I.) Clerkships, the Indian Civil Service, and Eastern Cadetships in the Colonial Service.—A youth who is aiming at these higher posts should remain at a Public School until he is eighteen or nineteen, and

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then proceed to the University. Distinct ability and a first-class training are essential for success, and, on the whole, "the all-round man" has a better chance of a high place than the man who is only good at one subject. The age of candidates must be between twenty-two and twenty-four, and the object of this regulation is doubtless to secure candidates who have had time to complete their career at a University. Oxford and Cambridge men still form the majority of the successful candidates, and Oxford has a larger proportion of successes than Cambridge, but graduates of London, Edinburgh, and Dublin also find good places.

The "Intermediate" Appointments.—These appointments form a mean between the Class I. and Class II. Clerkships. The scheme of examination was introduced in 1892, and, after some revision, assumed its present form in 1906. It applies to a group of fifteen classes of appointments, and was intended to attract candidates from Public Schools who do not intend to proceed to the University. The age limit is eighteen to nineteen and a half.

Second Division Clerkships.—These are within the reach of any candidate with a good general education and average ability. The age limit is seventeen to twenty. As the competition is keen, parents should see that their sons are being educated at well-equipped, well-staffed, and efficient schools. For all appointments good clear handwriting is of the greatest importance, and candidates must give it their most careful attention. The scope of the examination has been widened of late years, and this is to the advantage of a candidate whose education is fairly wide as well as sound. Hence the crammer (whose services at one time were necessary to secure mechanical accuracy in a limited number of subjects) is, in the majority of cases, no longer necessary, for

the Civil Service Commissioners do not want a hothouse product, but one that has developed quietly and steadily in the healthy atmosphere of a good school.

Boy Clerkships.—These are open to boys over fifteen and under sixteen, who are generally engaged in London, Edinburgh, or Dublin, in the Savings Bank Department of the General Post Office, the Inland Revenue, Board of Trade, Admiralty, and other offices. A Boy Clerk commencing his career at the age of fifteen, may, by showing perseverance, energy, and tact, and working hard in his leisure hours in order that he may successfully compete in the necessary examinations, pass through the stages of Assistant Clerk (a grade which is open only to Boy Clerks) at nineteen, Second Division Clerk at twenty-five, First Division Clerk at thirty-three, and up to Chief Clerk while under fifty years of age, or he may advance still more rapidly by successfully passing the open competitive examination for a Second Division Clerkship at seventeen, with the chance of obtaining a First Division Clerkship at twenty-two, a Chief Clerkship while under forty, with the glorious but distant possibility of being Permanent Under-Secretary of State of his Department while under forty-five years of age.

It often happens that a Boy Clerk, whose home is in the provinces, is appointed to an office in London (or possibly Edinburgh or Dublin) and that his parents have no relations or friends with whom he can reside to be near his work. This might necessitate his living in lodgings or a boarding-house, and the age of sixteen is rather young for a youth to be left to find his own residence and live practically alone. It may therefore interest parents to learn that an unofficial association has been formed by civil servants of the higher ranks, having representatives in every

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office employing Boy Clerks, in order to give advice and assistance to their youthful colleagues whenever it is needed.

First and Second Division Clerks are employed in nearly all the Government Offices, and, in addition to these, the Customs and Inland Revenue Departments both offer many excellent opportunities of rising to a good position, as will be seen on reference to the detailed particulars of the various posts set out later. Candidates for the Civil Service may also begin their career by entering the Post Office, and, by working hard and intelligently, gradually rise to the higher departments of the Service, for they receive an age allowance when competing for the various appointments, which is a decided advantage.

We will now give briefly the chief particulars concerning these four Divisions, taking the last Division first, dealing afterwards with Customs, and Post Office Departments, and certain appointments in the Colonial Services. For more complete information parents are referred to the *Civil Service Year-Book*, published early each year by Shephard, Cooper and Company, 76 to 78, Clerkenwell Road, London, E.C.

(a) **BOY CLERKSHIPS.**—Two Registers of Boy Clerks for temporary employment in the Public Departments are kept by the Civil Service Commissioners. One Register will contain the names of boys for service in London, Edinburgh, and the provincial towns of England, Scotland, and Wales. The other will contain the names of boys for service in Dublin and provincial towns of Ireland.

The centres at which candidates may be examined are London, Edinburgh, Dublin, Birmingham, Bristol, Cardiff, Leeds, Liverpool, Newcastle-on-Tyne, Plymouth, Southampton, Glasgow, Belfast and Cork; but most of the

THE CIVIL SERVICE [BOY CLERKSHIPS]

appointments are in London, though there are a few in Dublin. Vacancies in provincial towns in England are of rare occurrence, and the Scottish posts are filled for some time to come.

The competitions for the Irish service will as a rule be held at the same time as the competitions for service in Great Britain. The limits of age are fifteen to sixteen. If an examination begins in one of the first three months of any year, candidates must be of the prescribed age on January 1 in that year. If an examination begins in April or May of any year, candidates must be of the prescribed age on April 1 in that year. If an examination begins in June, July, or August, of any year, candidates must be of the prescribed age on June 1. If an examination begins in one of the last four months of any year, candidates must be of the prescribed age on September 1 of that year.

The entrance fee for the examination will in future be five shillings, and the following are the subjects :

1. Handwriting and Orthography.
2. Arithmetic, including Vulgar and Decimal Fractions.
3. English Composition.
4. Copying Manuscript.

And any three of the following, except that not more than two languages may be taken :

5. Geography.
6. English History.
7. Latin.
8. French.
9. German.
10. Mathematics: the subject-matter of Books I. and II. of Euclid's Geometry, and Algebra up to and including Simple Equations.
11. Elementary Science.

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Handwriting and Orthography are of the utmost importance in this examination. No subjects are obligatory, but the qualifying number of marks must be obtained.

Salaries.—The salary is 15s. per week of thirty-nine hours during the first year of service. After a year of approved service an increase of pay to 16s. may be allowed. No service in the capacity of Boy Clerk will confer any claim to superannuation or compensation allowance, and Boy Clerks will not be retained, as such, after they have reached the age of eighteen, subject to certain provisos, allowing them opportunities to enable them to enter for examinations for higher posts. After two years' service Boy Clerks are allowed in most open competitions to make some deduction from their actual age, even though at the time of competition they may no longer be in the service.

Assistant Clerkships.—The post of Assistant Clerk is open only to Boy Clerks. Candidates must be between seventeen and eighteen years of age, and examinations are held twice a year, usually in February and July. An examination was announced for February, 1914, for as many as 200 vacancies.

The number of these Assistant Clerks is to be increased, and the number of Boy Clerks to be reduced. By this it is intended to make a very desirable change in the old system, under which a large number of Boy Clerks were turned adrift at the age of twenty.

The entrance fee for the examination is 10s., and the subjects are—(1) English Composition, including Handwriting and Spelling. (2) Arithmetic. (3) Digesting Returns. (4) Précis and Indexing. (5) Book-keeping or Shorthand.

“Digesting Returns into Summaries” is of great importance in this examination. It is really a compound exercise in handwriting and arithmetic, and the greatest possible care must be taken to secure accuracy and neatness.

THE CIVIL SERVICE [SECOND DIVISION

Salaries.—The commencing salary is £45 a year, rising by annual increments of £5 to £85 per annum, and thence, subject to a special certificate of efficiency at £85, by £7 10s. to £150. For special merit an Assistant Clerk may be promoted into the Second Division after not less than six years' service, and he is also entitled to the usual age allowance of not more than two years in the open competition for such clerkships. Assistant Clerkships, in themselves, are not valuable appointments, but they are useful as stepping-stones to higher places.

(b) **SECOND DIVISION CLERKSHIPS.**—More than 4,000 Second Division Clerks are now employed in the various Government Offices. The entrance examination fee is £2, and the examination is open to all natural-born subjects of His Majesty between seventeen and twenty years of age.

These examinations have not hitherto occurred at fixed intervals, but it is intended that in future they shall as a rule be held once a year, in the autumn.

Boy Clerks are allowed "service" marks, and many benefit considerably thereby.

The subjects are now as follows :

1. Handwriting.
2. Copying Manuscript.
3. English.
4. Arithmetic.
5. Elementary Mathematics.
6. One of the languages : Latin, French, German.
7. A second language selected from Latin, French, and German, and not offered as subject (6).
8. Book-keeping and Stenography.
9. History and Geography.
10. Further Mathematics.
11. Science.

[Not more than two of the subjects numbered 7 to 11 may be offered.]

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No subjects are stated to be obligatory. In reality, however, all that are permitted to be taken under the Regulations are obligatory, as a candidate who omitted any one of them would have but small chance of success.

Salaries.—The commencing salary is £70, increasing by £7 10s. annually to £130, and thence by £10 to £200, and again by annual increments of £10 to £300 per annum.

The increments will not be allowed without an annual certificate from the departmental superiors that the Clerk's conduct during the year has been satisfactory. Before an advance beyond £200 is permitted a certificate is required that the Clerk concerned is competent to perform efficiently the highest duties ordinarily assigned to Clerks of the Second Division. After six years' service the salary of an exceptionally meritorious Clerk may be *specially* advanced by an amount not exceeding four annual increments.

When the salary of £300 has been reached, the next step is a Minor Staff Clerkship (£250 to £350), if such exists in his office. The Higher Grade scale will be confined to such existing Second Division Clerks as elect to remain on the old scale. Staff appointments in most of the Government offices are specially reserved for Higher Grade Clerks of the Second Division, the salaries varying from £300 to £500 per annum. After eight years' service Second Division Clerks may also be promoted to First Division (or Class I.) Clerkships.

(c) **THE "INTERMEDIATE" GROUP.**—This examination is an intermediate one between those for Class I. and those for the Second Division, and is intended to draw candidates from among boys at good Public Schools who do not intend to proceed to a University. It assumed its present form in 1906, but some modifications have been introduced for 1914 and after.

THE CIVIL SERVICE [INTERMEDIATE

The scheme applies to a large group of appointments—viz. :

1. Admiralty : Junior Appointments in the Supply and Accounting Departments.
2. Crown Agents for the Colonies : Clerkships (Class III.).
3. Ecclesiastical Commission : Junior Clerkships.
4. Exchequer and Audit Department : Examinerships.
5. Inland Revenue Department : Assistant Surveyorships of Taxes.
- 6, 7, 8. Inland Revenue Department : Second Class Clerkships in the Estate Duty Offices, London, Edinburgh, and Dublin.
- 9, 10. Metropolitan Police : Second Class Clerkships in the Commissioner's and the Receiver's Offices.
11. Board of Trade : Assistant Examinerships in the Department of the Inspector-General in Bankruptcy.
12. War Office : Junior Appointments in the Royal Ordnance Factories.
13. National Health Insurance Commission (England) : Examinerships in the Accountant and Comptroller-General's Department.
14. National Health Insurance Commission (Scotland) : Second Class Clerkships.
15. National Health Insurance Joint Committee : Situations as Computer in the Office of the Chief Actuary.
16. National Health Insurance Commission : Assistant Auditor.

The limits of age for these situations are eighteen and nineteen and a half, the half-year being reckoned by calendar months. If an examination commences in one of the first seven months of any year, candidates must be of

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the prescribed age on May 1 of that year. If an examination commences in one of the last five months of any year, candidates must be of the prescribed age on November 1 of that year.

The examination in 1914 and onwards will be in the following subjects :

CLASS I. (Obligatory) : Mathematics I. and English, 2,000 marks each ; General Paper, 1,000.

CLASS II. (Lower Standard) : Mathematics II., French, German, Latin, Greek, English History, European History, Chemistry, Physics, 2,000 marks each.

CLASS III. (Higher Standard) : Mathematics III., French, German, Latin, Greek, Chemistry, or Physics (one only), 4,000 marks each.

All the subjects in Class I. must be taken up. No candidate will be eligible who fails to pass a qualifying examination in Arithmetic and English. The "General Paper" is a new feature. It is to be based on History in its widest aspects, and not on a mere knowledge of details which may be acquired by its study as a school subject. Questions may also be set on Industries, Social Life, Art, Science, etc.—in fact, on any human activity—everything being looked upon from the point of view of its importance for the present time, and for boys of this nation. A liberal choice of questions will be allowed, and a considerable proportion of marks allotted to style and method in answering. From Classes II. and III. candidates may select subjects, one of which must be a language, carrying marks up to a maximum of 10,000, making with the subjects in Class I. 15,000 in all. The same subject may not be selected both in Class II. and in Class III. The examination fee is £3.

1. Admiralty : Junior Appointments in the Supply and Accounting Departments.—The holders of these posts are

liable to serve as required, either at the Admiralty or at any of the Naval establishments at home and abroad ; and no candidate is accepted who fails to satisfy the Medical Director-General of the Navy as to his physical fitness for service abroad. A successful candidate is appointed for two years on probation, and is only retained in the service if found to be in all respects satisfactory. Whilst serving at a foreign station, these officers are provided with official residences or with money allowances in lieu thereof, and they also receive colonial allowances, which vary in amount according to the station, toward meeting the increased expense of living. The Admiralty will endeavour, as far as practical, to limit the period of foreign service to about twelve years, of which it may be expected that about five years will be spent at tropical stations, and about seven years in temperate climates. The duration of service at any one station abroad will ordinarily be not more than three years, if within the tropics, or five years at a station in a temperate climate.

Officers attached to the Cash and Expense Accounts Departments will not be confirmed in their appointments unless during the probationary period they satisfy the heads of their respective departments that they have gained a sufficient knowledge of Book-keeping by Double Entry.

Salaries.—£100 a year. After the probationary period is served the salary is raised to £120, and then by annual increments of £10 to £200, and £15 to £350. Promotions are made as vacancies occur to higher appointments at the Admiralty, or in Dockyards, or Naval Yards at home or abroad.

2. Crown Agents for the Colonies : Clerkships Class III.—Candidates are appointed for two years on probation, at the end of which time their appointments are confirmed

CAREERS FOR OUR SONS

if they are found to be in all respects satisfactory. The staff of this office are servants of the Crown, and although they do not form part of the regular Civil Service, they are in a position corresponding to that of Civil Servants as regards tenure of office and payment of salaries and pensions.

Salaries.—£100, rising after two years' probation to £120, thence by £10 annually to £200, and by £15 to £350, subject to special certificate of efficiency.

3. Ecclesiastical Commission : Junior Clerks.

Salary.—£100, rising after two years' probation to £120, thence by annual increments of £10 to £200, and then by £15 a year to a maximum of £350. In some exceptional cases, the salary of a Clerk of at least five years' service may be specially increased to £200.

4. **Exchequer and Audit Departments : Examinerships.**—The scales of pay correspond to those in the Admiralty Departments. The holders of these posts will be liable to serve, as required, at any of the out-stations at home where the audit of accounts is conducted—*e.g.*, Portsmouth, Devonport, Chatham.

Candidates will not be confirmed in their appointments unless during the probationary period they satisfy the Comptroller and Auditor-General that they have gained a sufficient knowledge of Book-keeping by Double Entry.

5. **Inland Revenue Department : Assistant Surveyorships of Taxes.**—Assistant Surveyors are liable to removal to any Tax Survey in the United Kingdom.

Salaries.—£100 for two years, then £120, rising by £10 annually to £200, then by £15 to £350. The salary of any officer in receipt of less than £200 a year will be advanced to that amount in the Third Class Surveyor's Scale on his being placed in charge of an independent Tax District.

THE CIVIL SERVICE [INTERMEDIATE

6, 7, 8. Inland Revenue Department : Second Class Clerkships in the Estate Duty Offices in London, Edinburgh, and Dublin respectively.

Salaries.—£100 to £120 after two years' probation, thence by £10 a year to £200, and then by £15 to £350.

9, 10. Metropolitan Police : Second Class Clerks in the Commissioner's and the Receiver's Offices.—Candidates in the Receiver's Office will be required to qualify in Book-keeping by Double Entry. Promotion to higher posts will depend upon efficiency and good conduct.

Salaries.—£100 by £10 to £200; then, subject to good conduct and efficiency, by £15 to £350. A First or Second Clerk receives an allowance of £100 as Private Secretary to the Commissioner, and three Clerks get allowances of £50 each. In the Receiver's Office, four Clerks have allowances of £50 each.

11. Board of Trade : Assistant Examiners in the Department of the Inspector-General in Bankruptcy.

Salary.—Same as No. 10 above.

12. War Office : Junior Appointments in the Royal Ordnance Factories.—Successful candidates are appointed to the Ordnance Factories on the express understanding that they are liable to serve, as required, at Woolwich, Waltham Abbey, or Enfield Lock. At the two last places official residences are provided.

Salaries.—As in 10 above. In exceptional cases, the salary of a Clerk of at least five years' service may be specially increased to £200. Holders of these appointments are eligible for promotion to higher appointments as vacancies occur in the Ordnance Factories, but they will not have any claim to such promotion, which will depend on efficiency and merit.

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13. National Health Insurance (England) : Examiners in the Office of the Accountant and Comptroller-General.

Salary.—£100; after two years' probation, £120, then by £10 a year to £200; then, subject to good report on conduct and efficiency, and in particular as to proficiency in accounting knowledge, by £15 a year to £350.

Examiners are eligible for promotion to Assistant-Accountants and Accountants. Each candidate is appointed on condition that he will be liable to serve for such periods as may be required by the Commission in London, Edinburgh, Dublin, or Cardiff, or elsewhere in the United Kingdom.

14. National Health Insurance (Scotland) : Second Class Clerkships.

Salary.—As above, 13.

15. National Health Insurance, Joint Committee : Computers in the Office of the Chief Actuary.

Salary.—As above. Promotion from £200 upwards depends on a good report as to conduct and efficiency, and in particular as to proficiency in actuarial knowledge, determined by professional examination.

16. National Health Insurance, Audit Department : Assistant Auditors.

Salary.—£100; after two years' probation, £120, then by £10 a year to £200; and then, subject to satisfactory report as to conduct and efficiency, and in particular as to proficiency in knowledge of accounting and auditing under the National Insurance Acts, by £15 a year to £350.

(d) FIRST DIVISION (OR CLASS I.) CLERKSHIPS.—

These are the principal Clerkships in the Higher Establishment of the Civil Service, and in nearly all the

THE CIVIL SERVICE [FIRST DIVISION

Government offices. The examination is held annually in August jointly with the Indian Civil Service and Eastern Cadetship competitions. Identical papers are set for all three competitions, and the entrance fee of £6 admits a candidate to all or any of the competitions.

Candidates for all three examinations must be between twenty-two and twenty-four years of age on August 1 in the year in which the examination is held.

The subjects of examination and marks obtainable are now as follows :

	Maximum.
English Composition	500
Sanskrit Language and Literature	800
Arabic Language and Literature	800
Greek, not less than two subdivisions, of which one must be translation :	
Translation	400
Prose Composition	200
Verse Composition	200
Literature, etc.	300
Latin, not less than two subdivisions, of which one must be translation :	
Translation	400
Prose Composition	200
Verse Composition	200
Literature, etc.	300
English Language and Literature	600
Italian, Translation, Composition, and Conversation	400
Italian, History of the Language, and Literature ...	200
French, Translation, Composition, and Conversation	400
French, History of the Language, and Literature ...	200
German, Translation, Composition, and Conversation	400
German, History of the Language, and Literature ...	200

The History of these Languages and their Literatures can only be taken by candidates who also offer themselves for the rest of the examination in these languages.

Lower Mathematics	1,200
Higher Mathematics	1,200

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	Maximum.
Natural Science— <i>i.e.</i> , any number not exceeding four of the following, or three, if both Lower and Higher Mathematics be also taken :	
Chemistry	600
Physics	600
Geology	600
Botany	600
Zoology	600
Animal Physiology	600
Geography	600
Greek History (Ancient, including Constitution) ...	500
Roman History (Ancient, including Constitution) ...	500
English History, either or both sections may be taken :	
I. to A.D. 1485	400
II. A.D. 1485 to A.D. 1848	400
General Modern History	500
Logic and Psychology	600
Moral and Metaphysical Philosophy	600
Political Economy and Economic History	600
Political Science	500
Roman Law	500
English Law	500

N.B.—Deductions are made for bad handwriting. At the examination held in 1913 such deductions were made from the marks of fifty-four candidates, thirteen of them losing over 100 marks, and one over 200 marks for this cause. In one case a candidate lost twenty-five places on the list for bad handwriting. Unless an improvement is shown even more stringent methods are to be adopted in future.

The marks assigned to candidates in each branch are subject to deduction at the Commissioners' discretion. This is done to secure that a candidate gets no credit for a smattering of any subject. Under present regulations, candidates can choose their own subjects, provided that the maximum number of marks that can be obtained from the subjects chosen is limited to 6,000. If this maximum is exceeded by a candidate's selection he will be required to

THE CIVIL SERVICE [PROSPECTS, ETC.

indicate one of his subjects the marks for which should, in his case, be reduced so as to bring his maximum marks within the prescribed limit. The marks so reduced will be subject to a correspondingly reduced deduction.

Under the new Regulations the pure classical scholar is no longer at so great an advantage as before. Classics and Ancient History now count for some 3,200 marks, while Science can score 2,400, and Mathematics also 2,400. In the other subjects necessary to make up the 6,000 maximum, all three classes of students meet on neutral ground, so to say. At present, the older Universities still hold pride of place, with a fair proportion of successful candidates from the Scottish Universities. As the number of subjects is now limited, the candidate's knowledge of his selected subjects will have to be deeper and wider than ever. As regards the "crammer," it will probably be found that his services as a teacher, to a University man, will not be required, but there is no doubt that a little guidance from an expert is of value, especially in those subjects which have not been thoroughly studied at the University, or in any subjects (outside the University curriculum) for which a candidate may have a taste or natural aptitude.

PROSPECTS AND EMOLUMENTS.—Successful candidates are called upon immediately after the announcement of the results to choose the service for which they desire their names to be entered, but an option is given of waiting for a vacancy instead of accepting an unsuitable appointment. As vacancies occur (within a limited period) they are offered in rotation to qualified candidates then on the list.

(a) **Home Appointments.**—These include Clerkships in the Treasury, Home Office, War Office, Colonial Office, India Office, Admiralty, and numerous other offices, and all

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offer excellent prospects. The commencing salary varies according to the office, but is usually £200, going by £20 to £500. The next grade is usually £600 by £25 to £800, the next £850 by £50 to £1,000. This latter salary is attainable on reaching the age of fifty, with further chances of promotion to Permanent Secretaryships, worth £2,000 a year or more. In choosing (where choice is given) into which office a successful candidate will go, it will be advisable, when possible, to consult some friend already in the service, or anyone who may have special knowledge of the conditions of employment or prospects of promotion in the particular offices under review.

(b) Civil Service of India—Selected candidates, before proceeding to India, are on probation for one year, and those who pass their probation at one of the Universities or Colleges approved by the Secretary of State for India, receive an allowance of £150. During the year candidates are tested as to their proficiency in riding. At the end of the period of probation they are examined in the following subjects: Indian Penal Code; Code of Criminal Procedure; Indian Evidence Act; Indian History; and the principal vernacular language of the Province to which the candidate is assigned. These subjects are compulsory, and, in addition, candidates are allowed to select one of the following five optional subjects: Hindu and Mohammedan Law; Sanskrit; Arabic (these two may not be offered by any candidate who has offered them at the open competition); Persian; and Hindustani (for candidates assigned to the Province of Burma only). A candidate who fails at this Final Examination cannot be re-examined. Seniority in the Civil Service of India is determined by the order in which candidates stand on the list resulting from the combined marks of the open competition and the Final Examination.

THE CIVIL SERVICE [INDIAN CIVIL SERVICE]

It is not too much to say that the reputation of the I.C.S. stands as high as that of any Service in the world. The conditions as to leave, pensions, etc., are generous. The commencing salary is about 400 rupees per mensem, *i.e.*, £300 per annum, reckoning the exchange value of the rupee at 1s. 4d., the increase in salary is rapid and may rise to £2,400, or even more, the leave earned is about one-fourth of active service, and the prospects of advancement are practically unlimited, and there is a retiring annuity, after being twenty-five years in the service, and giving twenty-one years' active service, of £1,000.

As regards the pay of the higher posts, it may be stated that the man of ability rises to be a Commissioner (say, 35,000 rupees per annum) or a District and Sessions Judge (30,000 to 36,000 rupees per annum). The prizes of the Service are in the Executive line: (1) Lieutenant-Governorships (100,000 rupees); (2) Memberships of Council (some at 80,000 rupees); (3) Memberships of Revenue Board (48,000 rupees); (4) Secretaryships (30,000 to 48,000 rupees). In the Judicial lines the high posts are High Court Judgeships (42,000 to 60,000 rupees.)

(c) **Eastern Cadetships.**—These were established to supply the Civil Services of Ceylon, Hong Kong, the Straits Settlements, and the Federated Malay States. Successful candidates are allowed to indicate the Colony or Dependency they would prefer, but the final allotment rests with the Secretary of State for the Colonies. Before receiving a permanent appointment, Cadets attend at the Government Offices for part of the day, and also study the language of the country to which they are to be sent. They have to pass in the language required and generally in Law, and Colonial Regulations and Orders, before

CAREERS FOR OUR SONS

receiving promotion. The salaries are somewhat as follow : Ceylon, £300 per annum, without quarters, up to £1,450 per annum ; Hong Kong, £225 with a house allowance, up to £1,600 a year ; Straits Settlements and Malay States, as for Hong Kong, with maxima of £1,700 a year in the Straits Settlements and £2,260 in the Malay States. There are generous conditions as to leave, pensions, etc., in connection with these appointments.

CUSTOMS AND EXCISE.—Following upon the amalgamation of the Customs and Excise Services in 1909, considerable changes in the staffing of the Departments have been made. The Establishment of the Customs and Excise Department now comprises :

1. Indoor Staff at Headquarters, consisting of Class I. and Second Division Clerks.
2. General Service : (a) Officers, (b) Surveyors, (c) Collectors or Inspectors.
3. Waterguard and Preventive Staff (Preventive Men, Preventive Officers, and Inspectors).

There is now one entrance examination for the whole of the General Service, and as the number of clerical posts in the Amalgamated Service will be much smaller than the number of outdoor appointments, every entrant to the Service will be appointed to an outdoor post on which he will serve for not less than one year. After this he will be liable to be transferred to the clerical staff, and after three years' service he will be entitled to apply for such transfer, although the title to apply does not carry the right to be transferred. The Board reserve the right to transfer from outdoor to indoor and *vice versa*, and the staff similarly are entitled to apply.

THE CIVIL SERVICE [CUSTOMS AND EXCISE

The salary of the Officer class begins at £80, and rises subject to an "efficiency bar," by £7 10s. to £160, and thence by £10 to £300. The efficiency bar at £160 consists in an examination of books and good report. There is another at £250.

To reach the grade of Surveyor, there is a written competitive examination, at stated intervals, in practical departmental subjects. Vacancies for Surveyors are filled from those at the head of this list, and an officer unsuccessful in his first examination is allowed a second. The scale for Surveyors is £320 by £15 to £450, with an efficiency bar at £400.

Vacancies for men in the Controlling grade, called Inspectors and Collectors, are filled by Surveyors promoted for merit, the departmental examination for this grade being abolished. It is divided into two classes—(1) Second Class Inspectors and Collectors, £500 by £20 to £650; (2) First Class Inspectors and Collectors £700 by £25 to £800.

The allowances for removal, subsistence, office, etc., are still under consideration, and Officers are liable at any stage to be moved from one place to another. The hours are forty-eight a week, either by day or night, and anything beyond that is paid for as overtime.

The duties of Customs Officers are mainly with Customs and Duties, light dues, shipping, casualties to vessels, work connected with the Royal Naval Reserve, etc., etc.

The outdoor duties of Excise Officers now include, besides the former survey of manufactured articles liable to duty, and collection of certain licences, the administration of the Old Age Pensions Act, and the Finance Act, 1909-10, and some duties connected with National Health Insurance.

There was an examination in November, 1913, and

CAREERS FOR OUR SONS

another was announced for March 23, 1914, when one hundred situations were to be filled.

The limits of age are nineteen to twenty-one. For an examination in January—June, candidates must be of the prescribed age on March 1, for July—September the date will be September 1. The subjects of examination and maximum marks in each will be :

1. Handwriting	...	500	7. Latin ..	...	500
2. English	...	600	8. Mathematics	...	500
3. Arithmetic	...	600	9. Book - keeping	and	
4. Science	...	500	Shorthand	...	500
5. French	...	500	10. History and Geo-		
6. German	...	500	graphy	...	500

Only two of the subjects numbered 5 to 10 may be offered by a candidate. Candidates must obtain such an aggregate of marks in the examination as a whole as to satisfy the Civil Service Commissioners.

Service marks are allowed to Boy Clerks and Boy Copyists.

Defective vision will be regarded as a disqualification. Examination fee, £2.

Water Guard and Preventive Staff.—This consists of Preventive Men, Preventive Officers and Inspectors. The position of Preventive Man is in the gift of the Treasury and is obtainable through the influence of Members of Parliament. The salary commences at 18s. per week, and rises by annual increments of 1s. 6d. per week up to 33s. per week with “star” allowances up to 6s. a week. The class of Preventive Officer is a grade, created in 1891, for the performance of “rummaging duty.” The salary is £115, increasing by £5 annually to £150, and thence by £7 10s. to £200. This class is drawn from the Preventive Men (once known as “boatmen”) under Treasury Minute of March, 1891.

THE CIVIL SERVICE [GOVERNMENT LABORATORY

There are a certain number of higher posts available for these Preventive Officers—viz., forty-two Chief Preventive Officers £240 to £400, eight Superintendents of Waterguard (Second Class) £450 to £550, two Superintendents of Waterguard (First Class) £600 to £650, an Assistant Inspector £450 to £550, and an Inspector £600 to £650.

THE GOVERNMENT LABORATORY.—A Laboratory was established in 1843 at Somerset House, connected with the Inland Revenue Department, to check the adulteration of tobacco. In time the work of the Laboratory was extended to include the analysis of all sorts of excisable commodities. The Custom House had also its Laboratory, and the two were amalgamated in 1894, and known as the Government Laboratory. Gradually the Laboratory came to undertake work for every Government Department. In 1911 it was constituted a separate Department under the Treasury. Its business is carried on at the premises in Clement's Inn Passage, W.C., at the Branch Laboratory at the Custom House, and various Chemical Testing Stations at other centres.

The permanent Chemical Staff of the Laboratory now comprises the Government Chemist, the Deputy Chemist, four Superintending Analysts, and twenty-one Analysts in two classes.

Their salaries are :

Government Chemist	...	£1,200 to £1,500
Deputy Government Chemist	...	£700 by £25 to £800
Four Superintending Analysts	...	£600 by £20 to £650
Nine Analysts (First Class)	...	£400 by £20 to £550
Fifteen Analysts (Second Class)	...	£160 by £15 to £350

There are some seventy Temporary Assistants also employed at the Laboratory. Some are Customs Officers,

CAREERS FOR OUR SONS

lent for a period. Others are Assistants, unestablished and appointed by the Government Chemists. They are paid £100 to £120 by £10 to £160, and their engagement is only monthly.

Appointments to the position of Second Class Analyst on the Permanent Staff are made on the results of a competitive examination conducted by the Civil Service Commissioners. As these examinations are held at irregular intervals, it is advisable to inquire early of the Commissioners.

GENERAL POST OFFICE—Male Learners.—In Edinburgh, Dublin, and provincial town post offices. Age, fourteen and a half to sixteen. Height, on examination, 5 feet. Not retained in the service unless 5 feet 4 inches before end of nineteenth year. Entrance fee, 5s. Subjects of examination :

1. English Composition (including Writing and Spelling).
2. Arithmetic (Vulgar and Decimal Fractions, Metric System).
3. Geography (general).

The position of Male Learner in London is no longer open to competition, and is now filled by "Limited Competition." Learners have to undergo a period of instruction, and when qualified, are promoted to Sorting Clerks, Telegraphists, etc. For fuller details of work and salary, see the *Civil Service Year-Book*, Section I. (b).

Male Sorters.—London. Age eighteen to thirty (with service allowance). Height, 5 feet 4 inches. Subjects of examination, fee, etc., as for Male Learners. Commencing salary at eighteen years of age, 20s., with annual increments of 2s. per week up to 30s., then one year at 33s., one year at 37s., thereafter by annual increments of 2s. 4d. a week up to 44s. per week, with possibilities of rising to a

THE CIVIL SERVICE [GENERAL POST OFFICE

maximum of 62s. a week. These postal salaries are all rather unsettled at present. The probability, however, is that they will ultimately be increased rather than diminished or unaltered.

By the instructions of the Postmaster-General, the examination for provincial Male Sorters will in future be confined to Postmen and Telegraph Messengers—*i.e.*, by Limited Competition.

Clerks in Supplementary Establishments and other Departments.—Ages nineteen to twenty-six. Limited to those who have served at least two years in the Post Office. Fee £1. Subjects of examination :

(1) English Composition, including Writing and Spelling ; (2) Arithmetic (general) ; (3) Geography (general) ; (4) Any two of Latin or French or German ; and any two of the following—(5) English History ; (6) Mathematics ; (7) Shorthand.

Salaries.—Supplementary Clerks in the Secretary's Office commence with a salary of £100, rising by £10 to £250, and then through grades to £450.

Junior Clerks in the Superintending Engineers' Office, London, receive salaries of £75, rising by £6 to £100, and then by £7 10s. to £200.

The salaries of Clerks in other departments commence at £80, rising by £7 10s. to £200, with prospects of promotion to higher appointments, with varying maximum salaries.

Postmasterships.—Success in the departmental examinations and, also, nomination, are necessary to secure these appointments, particularly in the large towns and cities, where the salaries vary from £400 to £1,000. In smaller places the annual salary varies from £100 to £400.

PATENT OFFICE—Assistant Examiners.—These are Clerks engaged in examining the specifications and other

CAREERS FOR OUR SONS

documents submitted to the Patent Office by applicants for patents. Examinations are held from time to time to fill these posts. The age limit is twenty to twenty-five, and the subjects are chiefly scientific. A candidate must be really proficient to have even a chance of success. Thus they would appeal to those whose education is very strong on the side of science.

Salary.—Commencing at £150 a year, rising by annual increments of £15 to £450, with prospect of promotion to Deputy Examiner, £400 to £550; to Examiner, £550 to £700; and to Supervising Examiner, £700 to £800; and Chief Examiner, £900 to £1,100.

The subjects for examination are—

(1) English Composition; (2) Mathematics; (3) Mechanics; (4) Mechanism; (5) Technical Précis; (6) Chemistry; (7) Electricity and Magnetism; (8) Physics; (9) French or German; (10) History of Inventions.

No subjects are obligatory; but candidates must obtain a satisfactory aggregate of marks on the whole, generally about one-half. Examination fee, £5.

HIGH COURT OF JUSTICE, IRELAND—Junior Clerks.

—It is customary to fill by means of this examination certain Clerkships which are not of uniform value, but vary from £140 to £300 (maximum values). In each case there is a prospect of promotion to higher grades. The limits of age for these appointments are twenty and twenty-five. The examination takes place in Dublin only. There was no examination in 1909 or in 1911. In October, 1913, there was one vacancy (£100 by £10 to £300) and five competitors.

The subjects of examination are—

(1) Handwriting and Spelling, including copying of Manuscript.
(2) English Composition, including Précis. (3) Mathematics:

THE CIVIL SERVICE [IRISH HIGH COURT

Arithmetic to Vulgar and Decimal Fractions; Algebra to Simple Equations; Euclid, Books I. and II. (4) English History, including that of the Constitution. (5) English Language and Literature. (6) Geography. (7) Elementary Principles of Law. (8) Latin. (9) Book-keeping. (10) Mathematics: Arithmetic Advanced; Algebra to the Binomial Theorem; Euclid, Books III., IV., VI.; Trigonometry to the Solution of Triangles. (11) French. (12) German. (13) Shorthand.

All candidates to satisfy the examiners in Subjects 1 to 9. Subjects 10, 11, 12, and 13 are optional.

Examination fee, £3.

Police Courts, Metropolitan (Dublin) Clerks.—These appointments are rare. The age limits seventeen and twenty-five. The examinations are only held about every other year or so.

The examination will be in the following subjects:

Obligatory.—Reading aloud, Handwriting, Orthography, Arithmetic, English Composition, Proceedings before Magistrates, Law of Evidence.

Optional.—Copying imperfect Manuscripts, Indexing or Docketing, Digesting Returns, Book-keeping by Single Entry; any one of the following: Latin, French, German, Geography, and English History.

Examination fee, £2.

Salaries.—Second Class Clerks, £80—£5—£100, thence by increments of £7 10s. to £150. On promotion to First Class the salary is £180—£10—£300, and there is a Chief Clerk who receives £400, increasing by £15 to £500.

LAND VALUATION APPOINTMENTS.—This class of appointments was created by the Budget of 1909. Applications are invited from Valuers. The age limits are from thirty-five to forty-five years of age. Salaries £550 to £700. There is another grade with salaries £350 to £500 and, in addition, Juniors with salaries of £100 to

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£350, and some Second Division Clerks, and other Clerks at £45 to £150.

LABOUR EXCHANGES.—In addition to a Director and a General Manager there will be a very large number of well-paid posts in the Central Office in London, and in the Divisional and Local Offices. The head officials are nominated by the President of the Board of Trade, and the Superintendents by a Committee of Selection. Up to the present the offices have been filled by direct appointment from outside, or from other Government Offices, but in course of time, no doubt, the arrangements will be systematized in some way or other.

BOY ARTIFICERS AND APPRENTICES IN H.M. DOCK-YARDS.—A limited number of Boy Artificers will be entered annually for training for the rating of Engine-room Artificer in the Royal Navy. Candidates must be the sons of British subjects, and between the ages of fifteen and sixteen on the

1st of January for entry in January.

1st of May for entry in July following.

Candidates entered must be in good health and of sound constitution. They will be medically examined at the Admiralty, or at a Naval Port, or on one of His Majesty's Ships, and a successful candidate must produce the consent in writing of his parent or guardian to his entering the Royal Navy and engaging to serve twelve years from the age of eighteen.

Candidates are admitted as follows :

1. By open competition.
2. On the recommendation of certain Naval Commanders-in-Chief on account of service claims.

THE CIVIL SERVICE [INDIAN AND COLONIAL

3. On the recommendation of certain Education Authorities.

The subjects of examination are—

Arithmetic (250) ; English, including questions on a set book (300) ; Geometry and Algebra (300) ; History and Geography (250) ; Elementary Science (300) ; Drawing (100).

The rates of pay allowed are—

First year	6d. per day	} Seven days a week.
Second year	...	...	7d. „
Third year	...	...	8d. „
Over three years	...	...	9d. „

On being rated --

Engine-room Artificer (Fifth Class), 3s. per day.

Acting Engine-room Artificer (Fourth Class), 5s. 6d. per day.

Engine-room Artificers receive pay varying from 38s. 6d. a week to 45s. 6d. a week with free rations, according to length of service. As Chief Engine-room Artificer he may receive 52s. 6d. a week and free rations.

TECHNICAL POSTS IN THE HOME CIVIL SERVICES.—

There are a number of appointments, many well paid, for which special technical knowledge is required. A list of these will be found in the *Civil Service Year-Book*, Section I. (a), and details (*e.g.*, *re* Factory Inspectors, etc.) in Section II. (b).

INDIAN AND COLONIAL SERVICES.—Besides the Indian Civil Service and the Eastern Cadetships, already dealt with, there are other services which offer a career to a youth who is willing to go abroad. Some of these are open to competition, and particulars are given below.

INDIAN FOREST SERVICE.—These appointments are available only to those who can afford the expense of a period of special training lasting about three years

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Those who can afford the expense, and are physically fit for service in India, will find the Forest Service an attractive one, the duties being interesting and important, and the salaries good.

The examinations are held as required, and are advertised as usual in the Government organs.

The Regulations have recently been altered, and below we give a summary of those now governing these appointments :

The age limit will be nineteen to twenty-three years.

Every candidate must be a natural-born British subject. He must be prepared to give an undertaking, if selected, that he will not marry before he reaches India. He must be of good physique, and must produce evidence of character to satisfy the Secretary of State for India in Council that he is suited for the Indian Forest Service.

Qualifications.—Candidates must have obtained a degree with honours in some branch of Natural Science in a University of England, Wales, or Ireland, or have passed the Final Bachelor of Science Examination in Pure Science in one of the Universities of Scotland. A degree in Applied Science will not be considered as fulfilling these conditions. Candidates will be required to produce evidence that they have a fair knowledge of either German or French.

Should there be more candidates considered to be qualified in every respect than vacancies to be filled, the Secretary of State reserves the right to require them to pass a competitive examination conducted by the Civil Service Commissioners, on the results of which their final selection would depend. The subjects of examination will be : English Composition, German or French, Elementary Chemistry, Higher Chemistry, Physics, Geology, Botany, and Zoology. Not more than two of the last five subjects may be offered. The examination in German and French will include translation, composition, and conversation. The standard of the examination in the science subjects will be that of the Honours Schools of the Universities.

Medical Examination.—There will be an examination by the Medical Board, at which particular stress will be laid on good vision and hearing.

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After this examination candidates will be Probationers for a period of two years, during which time they will be required to obtain, if not obtained previous to selection as Probationers, the Degree or Diploma in Forestry at Oxford, Cambridge, or Edinburgh Universities; to have undergone a special course of instruction in Forestry, and to satisfy any other tests of proficiency which may be deemed necessary. During the vacations at their University, practical instruction under the direction and supervision of the Director of Indian Forest Study is given in selected British and Continental forest areas. Probationers have to pay all their own expenses at the University, or at practical instruction at home or abroad, except some fees to local forest officers.

To meet these expenses, payments are made to each probationer at the rate of £120 annually, not exceeding a total of £240. When the period of probation, with any intermediate tests, has been passed, probationers who have satisfied the conditions are appointed as Assistant Conservators in the Indian Forest Department, and from the date of arrival in India will draw pay at the rate of 380 rupees per mensem, equivalent to about £304 a year with the rupee at 1s. 4d.

Every Probationer before proceeding to India will be required to satisfy the authorities of his ability to ride.

The following is the staff, with the monthly salaries, of the Imperial branch of the Indian Forest Service :

Number according to Existing Sanctioned Scale.	Appointment.	Salary.
1	Inspector-General of Forests	2,650 rupees a month.
1	Assistant Inspector-General of Forests*	—
2	Chief Conservators (Burma and Central Provinces)...	2,150 rupees a month.
22	Conservators, in three grades	<div style="display: inline-block; vertical-align: middle;"> { <div style="display: inline-block; vertical-align: middle;"> 1,900 rupees a month respectively. 1,700 rupees a month respectively. 1,500 rupees a month respectively. </div> </div>

* The officer holding this appointment draws, in addition to the pay of his grade, a minimum local allowance of 200 rupees a month.

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Number according to Existing Sanctioned Scale.	Appointment.	Salary.
187	Deputy Conservators and Assistant Conservators ...	380 rupees a month, rising by annual increments of 40 rupees a month to 700 rupees a month; thereafter by annual increments of 50 rupees a month to 1,250 rupees a month, in the twentieth year of service.
5	Foreign Service appointments (four temporary)...	
10	Officers employed at the Forest Research Institute and College, Dehra Dun*	

The sanctioned appointments in the Imperial Forest Service are allotted to the various provinces as follows: Burma, 66; Madras, 34; Bombay, 27; Central Provinces, 24; Bengal, 11; United Provinces, 19; Punjab, 12; and Eastern Bengal and Assam, 18.

Pension Arrangements.—Pensions are granted after completing twenty years' qualifying service or attaining the age of fifty-five. Invalid pensions are given to officers retiring through ill health "not caused by irregular or intemperate habits." After less than ten years' service a gratuity is given not exceeding one month's emoluments for each completed year of service. After more than ten years' service, invalid pensions are given varying from 1,000 rupees a year up to 3,000 rupees a year after fourteen years. After the full qualifying period of service is passed, the pension is 4,000 rupees a year for twenty to twenty-four years' service, and 5,000 rupees a year for twenty-five years' service and upwards.

* These draw a local allowance of 150 rupees a month in addition to their grade pay, with the exception of the President of the Forest Research Institute and College, in whose case the allowance is at the rate of 200 rupees a month.

NOTE.—Under the improved scale of salary shown above, no Exchange Compensation Allowance is granted.

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LEAVE REGULATIONS.

1. The following is a summary of the principal regulations relating to the leave admissible to officers appointed to the Indian Forest Service by the Secretary of State from the United Kingdom.

LONG LEAVE.

2. Furlough and special leave with allowances (see paragraph 6) are admissible to an aggregate amount of six years during the service. The amount "earned" is one-fourth of an officer's active service, and the amount "due" is that amount less any enjoyed.

3. Furlough without medical certificate can, if due, be generally taken after eight years' active service, and again after three years' continuous service. It is limited to two years at a time.

4. Furlough on medical certificate may be granted (a) to an officer who has rendered three years' continuous service, for not more than two years, but capable of extension up to three years; and (b) to an officer who has not rendered three years' continuous service, up to one year in any case, and up to such longer period, if any (but not exceeding two years in all), as the officer may have furlough "due" to him.

5. The allowances admissible during furlough are—

(a) During the first two years of furlough without medical certificate, and during so much of furlough with medical certificate as may be "due," half average salary, subject to certain maximum and minimum limits.

(b) After the expiration of the period for which the foregoing allowances are admissible one quarter of average salary, subject to certain maximum and minimum limits.

6. Special leave may be granted at any time for not more than six months, with intervals of six years' service; allowances, calculated as during furlough, are given during the first six months only, whether taken in one or more instalments.

SHORT LEAVE.

7. Privilege leave is a holiday which may be granted to the extent of one-eleventh part of the time that an officer has been on duty without interruption, and it may be accumulated up to three months, earned by thirty-three months' service. During privilege leave the officer retains a lien on his appointment, and receives the

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salary which he would have received if on duty. An interval of not less than six months must elapse between two periods of absence on privilege leave.

Privilege leave may be prefixed to furlough, special leave, or extraordinary leave without allowances. The whole period of leave thus taken in combination is known as combined leave. Combined leave may not be granted for a period of less duration than six months, nor, except on medical certificate, may it be extended beyond two years.

8. Extraordinary leave without allowances may be granted in case of necessity, and, except in certain specified cases, only when no other kind of leave is by rule admissible. It may be granted in continuation of other leave.

9. Subsidiary leave, usually with half average salary, is granted to an officer proceeding on or returning from leave out of India, or on retirement, to enable him to reach the port of embarkation or to rejoin his appointment. It is admissible only at the end, and not at the beginning, of combined leave.

10. Short leave is also granted to enable officers to appear at examinations, etc.

GENERAL RULES.

11. Leave of absence, whether on furlough or on privilege leave, can never be claimed as of right, and is given or refused at the discretion of Government.

12. After five years' continuous absence from duty an officer is considered to be out of the employment of Government.

13. When leave allowances, other than privilege leave pay, are paid at the Home Treasury or in a colony where the standard of currency is gold, rupees are converted into sterling at the rate of exchange fixed for the time being for the adjustment of financial transactions between the Imperial and Indian Treasuries, unless any other rate has been exceptionally authorized. But for the present the rate of conversion is subject to a minimum of 1s. 6d. to the rupee. Privilege leave pay, when issued from the Home Treasury (this is only admissible when privilege leave is combined with other leave), is converted at 1s. 4d. to the rupee.

OPENINGS FOR PUBLIC SCHOOLBOYS IN BORNEO.—

There are occasional openings for young men who have received a high-class Public School education under the

administration of that part of the Island of Borneo which is under the British flag.

Applicants for positions in the service of either the British North Borneo Company or the Raja of Sarawak should be of strong physique and able to live in a tropical climate.

British North Borneo Company.—Cadets are appointed direct. They must be over twenty-one years of age, and there is a medical examination. The commencing salary is 140 dollars (Singapore currency, *i.e.*, 1 dollar = 2s. 4d.) per mensem, with plainly furnished quarters or allowance in lieu thereof. The agreement in the first place is for three years. Candidates pay their own passage out, but the money is refunded (up to £50) after three years' service. The Company pays for the passage home at the expiration of the agreement.

Sarawak.—All appointments are made by His Highness the Raja, and applications are to be made to him direct. There is no examination. Cadets generally enter between nineteen and twenty-two years of age. There is no age limit. The duties are similar to those of Civil Servants in Ceylon and the Malay Federated States. The commencing pay of a Cadet is 100 dollars (Singapore currency) per mensem, rising to 500 or 600 dollars, including allowances. There are liberal leave regulations. Pensions of half-pay at the end of thirty years' service. Vacancies may be said to average only two or three in the year.

INDIA AND COLONIAL POLICE SERVICE.—Examinations for these appointments will probably be held annually in June, and will be duly advertised. They are intended to provide for the Police Services of India, Burma, Hong Kong, the Straits Settlements, and the Federated Malay

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States. There is no expensive preliminary training, as for the Forest Service, and candidates take up their appointments at once. Very soon after the examination, not later than the following October, candidates start for India, and get a free passage. In India probationers receive 300 rupees a month (*i.e.*, £240 per annum, taking the rupee as equivalent to 1s. 4d.), and as soon as they have passed the departmental examination they are on the regular staff, and their pay will rise through the different stages up to the Inspector-General's stipend of 3,000 rupees a month, or £2,400 per annum. For this service good riding is a *sine qua non*. Colonial Police probationers (for whom also skill in riding is imperative) begin with pay at £225 per annum, and are subject to local regulations as to examinations in languages, etc. On passing these they get £300 per annum. The higher posts range from £360 to £1,200 per annum. All these officers get free quarters, but the value of these quarters will not count for pension purposes.

The regulations for the Indian Police Service are given as follows in detail :

1. *Place of Examination.*—The examination will be conducted by the Civil Service Commissioners. Candidates may undergo the written part of their examination in London, Edinburgh, or Dublin, or at any of the provincial centres at which the simultaneous examination of candidates for admission to the Royal Military College, Sandhurst, is to be held. A list of the probable centres may be obtained from the Civil Service Commissioners. The oral and practical parts of the examination will be held in London only.

Examination Fee.—A fee of £2 is required from candidates examined in London, but when the written examination is conducted elsewhere than in London the fee is £3. Candidates examined at a college or school will probably be required to pay a local fee (in order to defray the expenses of superintendence), as to which

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they should obtain early information from the college or school authorities. The fee payable to the Civil Service Commissioners must be paid by means of stamps of the specified amount. Instructions on this point will be issued to candidates about ten days before the examination.

2. *Number of Appointments.*—The number of candidates to be selected will vary from year to year. In 1914 it was 24—viz. : Madras, 2 ; Bombay, 2 ; Bengal, 4 ; United Provinces, 5 ; Punjab, 4 ; Burma, 3 ; Bihar and Orissa, 1 ; Central Provinces, 2 ; and Assam, 1.

3. *Conditions of Eligibility.*—Every candidate must be a British subject of European descent, and at the time of his birth his father must have been a British subject, either natural-born or naturalized in the United Kingdom. The decision of the Secretary of State in Council as to whether a candidate satisfies this condition shall be final. Candidates must, without exception on any ground, be above nineteen and under twenty-one years of age on a specified date. They must be unmarried, and if they marry before reaching India, they will forfeit their appointments.

NOTE.—Parents and guardians of candidates are warned that European descent will be regarded as essential. In order to prevent disappointment, in cases of doubt where there has been some admixture of non-European blood, an application should be made to the Secretary of State for India in Council for a decision as to the candidate's eligibility to compete at the examination. In the absence of such a decision, the fact that a candidate has been admitted to the examination will give him no claim to an appointment should it be discovered afterwards that he is not of European descent.

4. *Form of Application.*—Application to compete at the examination must be made on a printed form to be obtained from the Secretary, Judicial and Public Department, India Office, Whitehall, London, S.W., and to be returned to him, with the necessary documents, not later than a specified date.

No applications received after that date can be considered.

Candidates must be prepared to attend at the India Office, if required, at their own expense, to reply to any inquiries which may be considered necessary in connection with their application.

5. *Subjects of Examination.*—The subjects and the marks assigned to each are given on p. 218

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CLASS I.

<i>Obligatory :</i>					Marks.
English	2,000
Mathematics A (Elementary)	2,000
French or German	2,000
English History and Geography	...	...	...	...	2,000

These subjects must be taken up by all candidates.

CLASS II.

<i>Optional :</i>					Marks.
Mathematics B (Intermediate)	...	...	...	...	2,000
Mathematics C (Higher)	...	...	...	...	2,000
German or French	...	...	...	...	2,000
Latin ...	...	...	...	...	2,000
Greek ...	...	...	...	...	2,000
Science (Physics and Chemistry)	...	...	...	...	2,000

Not more than two of these subjects may be taken up, and if one of the subjects selected is a modern language, it must be different from the modern language selected in Class I.

In addition to the above-mentioned subjects, candidates may take up Freehand Drawing, to which 400 marks will be allotted. Candidates must obtain such an aggregate of marks in the examination as a whole as may indicate, in the judgment of the Civil Service Commissioners, a competent amount of general proficiency.

6. *Medical Examination.*—Those candidates who are successful in the literary examination will be required shortly after the result of that examination is declared to undergo a strict examination by a Medical Board at the India Office as to their physique and capacity for active out-door work in the plains of India. Instructions as to the date and time of this examination will be issued to successful candidates by the India Office.

To avoid possible disappointment candidates should undergo a preliminary medical examination within two years before they compete. Application should be addressed to the Under Secretary of State, India Office, Whitehall.

7. *Appointment of Probationers.*—The Secretary of State will nominate as probationers such competitors as attain the highest aggregate of marks (provided that they obtain the minimum aggregate referred to above, and that they pass the medical examination and satisfy the requisite conditions in other respects).

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8. *Riding Tests*.—Selected candidates will be examined by the Civil Service Commissioners as to their ability to ride, and will be required to produce—

- (a) A certificate from the Civil Service Commissioners that they are able to ride well and to perform journeys on horse-back ; or—
- (b) A certificate from the Civil Service Commissioners of minimum proficiency* in riding.

In the latter case they will be subjected on their arrival in India to such further tests in riding as may be prescribed by their Government, and will not be appointed Assistant Superintendents of Police until they shall have passed such tests to the satisfaction of their Government.

9. *Allotment of Provinces*.—Selected candidates who have successfully passed the above-mentioned tests will be allotted, as probationers, to the various provinces upon a consideration of all the circumstances, including their own wishes ; but the requirements of the public service will rank before every other consideration. The allotment will also be subject to the right of the Government of India to make transfers, if necessary.

10. *Outfit*.—It is an ordinary condition of appointment to the Police Department that a successful candidate shall be supplied by his parents or guardians (a) either with a uniform or with the cost of it, and (b) with not less than £50 for the purchase of a horse and saddlery in India.

11. *Departure for India*.—The probationers will be required to start for India not later than October, so as to arrive in the course

* Candidates are warned that the certificate of minimum proficiency in riding, without which they will not be allowed to proceed to India, is only granted to those who can qualify in a series of tests which includes jumping. It is, therefore, most important that riding lessons should not be postponed until after the result of the literary examination is declared.

The chief tests will be Saddling and Bridling, Mounting and Dismounting, Trotting and Cantering, Riding without stirrups at a trot, Riding with stirrups but without reins at a trot, Jumping a moderate hedge hurdle. Special importance will be attached to the first test (Saddling and Bridling).

Although the examination will, in the main, be confined to those points, the examiner will not be debarred from applying any other tests which may appear desirable.

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of November. Failure to embark in time will, in the absence of satisfactory explanation, lead to forfeiture of appointment. Free passages to India will be provided by the India Office, but any probationer resigning his appointment within three years on any ground but that of health, supported by a medical certificate, will be required to refund the cost of his passage.

12. *Salary during Probation.*—On arrival in India probationers will receive an initial salary of 300 rupees a month.

13. *Period of Probation.*—Probationers will be required to qualify by passing the necessary departmental examinations (as well as the riding test, if necessary—see Rule VIII.) within two years of their arrival in India.

14. *Liability of Probationers to Removal.*—Any probationer who may fail to pass the prescribed examinations within two years, or be found unfit for Police duties, will be liable to removal from the Service. Any probationer so removed from the Service will be furnished with a free passage to England, provided he utilizes such passage within three months from the date of such removal.

15. *Promotion after Probation.*—No probationer will be eligible for promotion, either acting or substantive, until he has passed the prescribed departmental examinations, including the riding test.

LIST OF APPOINTMENTS IN INDIA ORDINARILY RESERVED FOR THE POLICE DEPARTMENTS OF THE SEVERAL PROVINCES.

The salaries and number of appointments of each grade vary slightly in the different provinces, but a clear idea of the scales will be gathered from the following summary :

Assistant Superintendents of Police.—Salaries, 300, 400, and 500 rupees per month. The numbers employed range from eleven in Assam to fifty in Agra and Oudh.

District Superintendents of Police.—Salaries, 700, 800, 900, 1,000, and 1,200 rupees per month. Numbers range from twelve to fifty-five in different provinces.

Deputy Inspectors-General.—Salaries, 1,500 to 1,800 rupees per month. Numbers range from two in some provinces to five in others.

Inspectors-General.—One for each province. Salaries, 2,250 rupees per month in Assam, and 2,500, rising by 100, to 3,000 rupees in the other provinces.

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EXTRACT FROM THE REGULATIONS AS TO THE PHYSICAL EXAMINATION OF CANDIDATES FOR APPOINT- MENTS UNDER THE GOVERNMENT OF INDIA.

These Regulations are published for the convenience of candidates, and in order to enable them to ascertain the probability of their coming up to the required physical standard. But it must be clearly understood that the Secretary of State reserves to himself an absolute discretion to reject as unfit any candidate whom he may consider, after hearing the opinion of his medical advisers, to be physically disqualified for the public service; and that his discretion is in no respect limited by these Regulations.

GENERAL PHYSICAL REQUIREMENTS.

1. A candidate must be in good mental and bodily health, and free from any physical defect likely to interfere with the efficient performance of duty.

2. In the examination of candidates the Medical Board will apply the following table of correlation of age, height, and chest girth :

Age.	Height without Shoes.	Chest.	
		Girth when Expanded.	Range of Expansion.
	Inches.	Inches.	Inches.
19 to 21	62½ and under 65	35	2
	65 and under 68	35	2
	68 and under 70	35½	2
	70 and under 72	36	2
	72 and upwards	36½	2½

3. *Measurement of Height.*—A minimum height of 5 ft. 4 in. is imposed. The candidate will be placed against the standard with his feet together, and the weight thrown on the heels, and not on the toes or outside of the feet. He will stand erect without rigidity, and with the heels, calves, buttocks, and shoulders touching the standard; the chin will be depressed to bring the vertex of the head level under the horizontal bar, and height will be noted in parts of an inch to eighths.

4. *Measurement of Chest.*—The candidate will be made to stand erect with his feet together, and raise his hands above his head.

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The tape will be carefully adjusted round the chest, with the posterior upper edge touching the inferior angles of the shoulder blades, and its anterior lower edge the upper part of the nipples. The arms will then be lowered to hang loosely by the side, and care will be taken that the shoulders are not thrown upwards or backwards so as to displace the tape. The candidate will then be directed to empty his chest of air as much as possible. This is best done by continuous whistling with the lips as long as sound can be produced. The tape is carefully gathered in during the process, and when the minimum measurement is reached it is recorded. The candidate will then be directed to inflate his chest to its utmost capacity. This maximum measurement will likewise be noted. The girth with the chest fully expanded, and the range of expansion between the minimum and maximum will then be recorded.

5. The hearing must be good.

6. The speech without impediment.

7. The teeth in good order—*i.e.*, decayed or broken teeth must be properly stopped or crowned, and deficient teeth replaced by artificial teeth where necessary for effective mastication.

8. The chest must be well formed, the lungs and heart sound.

9. Rupture, hydrocele, varicocele, varicose veins, in a severe degree, or other condition likely to cause inefficiency, will disqualify a candidate, unless such condition is cured by operation.

10. The limbs, feet, and toes must be well formed and developed, with free and perfect motion of all joints.

11. A candidate must have no congenital malformation or defect likely to interfere with efficiency.

12. A candidate must not be the subject of chronic skin disease.

13. Evidence of previous acute or chronic disease pointing to an impaired constitution will disqualify.

REGULATIONS AS TO STANDARD OF VISION FOR THE INDIAN POLICE DEPARTMENT.

1. Squint, or any morbid condition of the eyes or of the lids of either eye liable to the risk of aggravation or recurrence, will cause the rejection of the candidate.

2. The examination for determining the acuteness of vision includes two tests—one for distant, the other for near vision—without glasses, except where otherwise stated below, at a distance of 20 feet; and Snellen's optotypi for the test for near vision, without glasses, at any distance selected by the candidate. Each eye will be

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examined separately, and the lids must be kept wide open during the test. The candidate must be able to read the tests without hesitation in ordinary daylight.

3. A candidate possessing acuteness of vision, according to one of the standards herein laid down, will not be rejected on account of an error of refraction, provided that the error of refraction, in the following cases, does not exceed the limits mentioned, viz. : (a) in the case of myopia, that the error of refraction does not exceed 2·5 D ; that any correction for astigmatism does not exceed 2·5 D ; and in the case of myopic astigmatism that the total error of refraction does not exceed 2·5 D.

4. Subject to the foregoing conditions, the standards of the minimum acuteness of vision with which the candidate will be accepted are as follows :

STANDARD I.

	<i>Right Eye</i>	<i>Left Eye.</i>
Distant Vision ...	V = $\frac{6}{8}$...	V = 6·6.
Near Vision ...	Reads 0·6 ...	Reads 0·6.

STANDARD II.

	<i>Better Eye.</i>	<i>Worse Eye.</i>
Distant Vision ...	V = 6·6 ...	V without glasses = not below $\frac{6}{8}$, and after correction with glasses = not below $\frac{6}{4}$.
Near Vision ...	Reads 0·6 ...	Reads 1.

STANDARD III.

	<i>Better Eye.</i>	<i>Worse Eye.</i>
Distant Vision, V without glasses = not below $\frac{6}{4}$; and after correction with glasses = not below $\frac{6}{8}$.		V without glasses = not below $\frac{6}{4}$, and after correction with glasses = not below $\frac{6}{2}$.
Near Vision = Reads 0·8.		Reads 1.

N.B.—In all other respects candidates must come up to the standard of physical requirements laid down for candidates for commissions in the army.

LEAVE.

The conditions of leave are largely similar to those given above for the Indian Forest Service.

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PENSIONS AND PROVIDENT FUND.

1. The following is a summary of the pension rules applicable to officers of the Indian Police appointed by the Secretary of State for the United Kingdom.

An officer of the Indian Police becomes eligible for a pension on completing thirty years' qualifying service, or on attaining the age of fifty-five years. If at an earlier date he is compelled to retire from the service through ill-health not occasioned by irregular or intemperate habits, he becomes eligible for an invalid pension or a gratuity, according to the length of his service.

The amount of pension or gratuity is regulated as follows :

After a service of less than ten years, a gratuity not exceeding one month's emoluments for each completed year of service.

After a service of not less than ten years, a pension not exceeding the following amounts :

Years of Completed Service.	Sixtieths of Average Emoluments.	Maximum Limit of Pension.
10	10	2,000 rupees a year.
11	11	2,200 " "
12	12	2,400 " "
13	13	2,600 " "
14	14	2,800 " "
15	15	3,000 " "
16	16	3,200 " "
17	17	3,400 " "
18	18	3,600 " "
19	19	3,800 " "
20	20	4,000 " "
21	21	4,200 " "
22	22	4,400 " "
23	23	4,600 " "
24	24	4,800 " "
25 and above	30	5,000 " "

Officers who have shown special energy and efficiency during an effective service of three years in certain appointments may, at the discretion of the Government of India, be allowed an additional pension of 1,000 rupees a year, subject to the condition that an officer must not retire voluntarily before the completion of a total qualifying service of twenty-eight years.

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Subject to certain prescribed conditions, rupee pensions are now issued at the rate of exchange of 1s. 9d. the rupee to pensioners residing in countries in which the Indian Government rupee is not legal tender.

2. A Provident Fund has also been established on the following basis :

- (1) The contribution is compulsory up to $6\frac{1}{4}$ per cent. on salaries, with voluntary contributions of not more than a further $6\frac{1}{4}$ per cent. Subscriptions on leave of any kind will be optional.
- (2) Compound interest on such payments is annually credited by Government to each officer subscribing, the rate being at present 4 per cent. per annum.
- (3) The sum which thus accumulates to the credit of an officer is his absolute property, subject to the rules of the Fund, and is handed over to him, unconditionally, on quitting the service ; or in the event of his death before retirement, to his legal representatives.
- (4) Other forms of life insurance will, however, if they fulfil certain conditions, be accepted in lieu of the contributions mentioned in (1).

INDIA PUBLIC WORKS DEPARTMENT AND INDIA STATE RAILWAYS.—These are under separate administration, but candidates are selected under the same regulations. The Public Works Department is occupied mainly with irrigation, buildings, and roads ; but the State Railways are considered as giving better chances, for the reason that railwaymen have better chances of obtaining appointments elsewhere if they wish to leave India.

The average number of vacancies for Assistant Engineers is about thirty a year. The appointments are made by the Secretary of State, with the aid of the Selection Committee, which contains at least one eminent engineer.

The limits of age are twenty-one to twenty-four, and (for English appointments) every candidate must be a British subject of European descent, and his father must have been a British subject.

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The pay of an Assistant Engineer begins from his landing in India, and commences at 4,560 rupees a year. Assistant Engineers usually become Executive Engineers after ten years' service, and proceed from 9,600 rupees to 15,000 rupees a year, whilst there are higher classes going up to 24,000 rupees and 30,000 rupees a year.

Candidates must either have (1) one of the prescribed University degrees, or (2) the A.M.I.C.E. diploma, or (3) some equivalent distinction. Candidates who have a degree should have a year's practical experience under a Civil Engineer. Those without a College course should have three years' experience. There is a medical examination in London, and a year's probation in India. There are liberal arrangements for leave and pensions.

For the **Indian Medical Service** consult the chapter on Medicine, where full details are given.

INDIAN FINANCE AND CUSTOMS DEPARTMENTS.—

These appointments are in the following departments: Indian Finance, Indian Finance (Military), and Indian Customs.

Appointments are made annually, usually in the summer, by the Secretary of State for India, with the advice of a Selection Committee. Applications to be made before May 31. The age limits are twenty-two to twenty-five.

Every candidate must be a natural-born subject of His Majesty, must have a University degree with honours, or have taken a good place in the Home and Indian Civil Service Examination. For the Finance Department proficiency in Mathematics is an advantage, and for Customs Modern Languages, Chemistry, and Physics. There is a medical examination before the Board at the India Office.

Appointments are on probation, and subject to con-

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firmation by the Government of India, and probationers have to pass certain Departmental Examinations. Finance Officers may have to serve in any part of India or Burma, and are sometimes lent for foreign service in Native States. In the Customs a probationer usually goes first to a Presidency town or Rangoon, and after a year has to pass a Departmental Examination in Hindustani, Customs work, and in Law and Procedure.

Salaries and Prospects — Finance Department. — Probationers get 300 rupees per month, with yearly increments of 50 rupees. Next come Officers on the General List, Class III., 300 rupees per month, by 50 rupees, to 1,250 rupees, thence by biennial increments of 50 rupees to 1,800 rupees. There is a higher class at 1,500 rupees by 60 rupees to 1,800 rupees per month, and five Accountant-Generalships for merit worth 2,250 rupees to 2,750 rupees per month.

Finance (Military) Department.—Second Class Accountants with salary similar to Class III. above; First Class Accountants at 1,650 rupees per month; Controllers at 2,200 rupees; and an Accountant-General at 2,500 rupees per month.

Customs Department.—Probationerships, 300 rupees per month; Assistant Collectorships, five classes, from 450 rupees to 1,400 rupees per month; Collectorships, 2,050 rupees and 2,250 rupees per month; and a Collectorship at 2,500 rupees per month.

In addition to the above, there are local allowances at various places for various grades of officers.

There are pension arrangements for thirty years' service, and invalid pensions or gratuities after ten years' service.

Leave is arranged in the usual way, customary in India, of long and short leave, privilege leave, extraordinary leave, etc.

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MINOR FOREST SERVICES OF THE EMPIRE.—Besides the great Indian Forest service, there are several smaller Forest services throughout the Empire, open to young men who are qualified by a Forestry diploma or other evidence of Forestry training. The principal services are those of Crown Colonies and Protectorates—viz., Ceylon, Federated Malay States, East Africa, Uganda, Nyassaland, Southern Nigeria, Northern Nigeria, Gold Coast, and Sierra Leone. Some particulars are given below.

Ceylon and Malay States.—Recruited at present as for the Indian Forest service.

Salaries.—£300 by £60 to £360 in Malay (plus an allowance of £60) and to £350 in Ceylon.

East Africa.—Assistant Conservators at £250 and £300; Conservator at £500 to £700. Uganda: Assistants, £250 to £300, and £200 to £250; Chief Forestry Officer, £400 to £500. Nyassaland: Chief Forestry Officer, £250 to £350.

West Africa.—Mostly in Southern Nigeria and Gold Coast. Selected candidates sent to Germany for some months' training, and possibly also to the Malay States. The salaries of Assistant Conservators are usually £300 to £400; Conservators get £400 to £700; and Chief Conservators, £600, £800, or £1,000.

There are also openings for the same work in Cyprus, British Guiana, and the Sudan.

ADMINISTRATIVE APPOINTMENTS IN EAST AND WEST AFRICA.—The following appointments in East and West Africa are filled in England, usually in April, August, or December, and usually about eight at each time:

East Africa, Uganda, and East Africa Protectorate.

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Assistant District Commissioner. West Africa, Southern Nigeria: Assistant District Commissioner. Northern Nigeria: Assistant Resident. Gold Coast and Sierra Leone: Assistant District Commissioner.

The salary of these officers commences at £300 in West Africa and at £250 in East Africa, rising by £15 to £400 and £350 respectively. The higher ranks are recruited almost exclusively from the lower, and posts are available worth as much as £800 or £900. There are also staff posts and "duty pay."

The age-limits are from twenty-three in West Africa and twenty-two in East Africa. There is no maximum age, but preference is given to unmarried men under thirty-five.

Applications for these appointments should be addressed to the Private Secretary of the Secretary of State for the Colonies. Forms are supplied for particulars of career and qualifications, and suitable candidates are noted on the list for appointment when vacancies occur.

The principal duties of these officers are those of Magistrate and Political Officer; but they may have to do all kinds of duties—Police, Accounting, Engineering, and so forth, combined with a good deal of travelling.

The posts carry liberal provisions for leave, especially in West Africa, based on length of service, and all appointments on the regular establishment are pensionable.

ADMINISTRATIVE APPOINTMENTS IN RHODESIA.

—Candidates must furnish copies of at least three recent testimonials by qualified persons, from personal knowledge. One of these should be from the candidate's College Tutor. Candidates must be between twenty-one and twenty-five years of age.

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The duties are those usually performed by Civil Servants, and vary in accordance with the department to which they may be assigned.

The conditions vary slightly according to the province.

Southern Rhodesia.—Salary commencing at £240, by £20 annually to £320; then to await transfer to a higher grade, beginning at £350, and going up by £25. There are pension rights after the period of probation (two years), and leave of five months for three and a half years' service.

Northern Rhodesia.—Engaged for three years on probation. Salary: £250 first year, £275 second year, and £300 third year. After probation the salary is £325 by £25 to £400; the maximum salary (other than special) is £725. In other respects the conditions are much as in Southern Rhodesia.

The climate varies, but is generally healthy, and in some parts one of the most pleasant in the world.

EGYPTIAN AND SUDANESE CIVIL SERVICES.—Applicants for appointments in the above services should be about twenty-two to twenty-five years of age and have completed, or be about to complete, their University course.

Persons not fulfilling these requirements can only be accepted if they possess special qualifications, or if they are required to fill special posts.

Application for appointment should be made—

1. By members of the University of Oxford through the Appointments Committee of that University.
2. By members of the University of Cambridge through the Cambridge Appointments Board.
3. By members of the University of London through the Appointments Committee of that University.

4. By members of the University of Edinburgh through the Appointments Committee of that University.
5. By members of the University of Trinity College, Dublin, through the Trinity College, Dublin, Appointments Committee.
6. Candidates belonging to none of the above should apply direct to the Secretary to the Selection Board, Ministry of Finance, Cairo.

The Egyptian Government is not concerned with the religious or political views of the candidates.

Candidates will be allowed in future to state their preference for service either in Egypt or in the Sudan.

Candidates provisionally selected must pass a Medical Board, and are then interviewed by the Final Selection Board meeting in London in April.

Successful candidates are required to spend a probationary year at Oxford or Cambridge at their own expense to study Arabic; and during the probationary year they will further be required to attend courses of instruction in First Aid, Elementary Surveying, Account Keeping, and such other subjects as may from time to time be ordered by the Selection Board in accord with the University authorities. Proficiency in subjects other than Arabic is not obligatory. Lecturers' fees are paid by the Egyptian Government.

It is desirable that candidates should be able to ride, and those who are not accustomed to riding should take lessons.

A sound knowledge of French is most useful, if not indispensable, in *Egypt*.

On completion of their year of probation the candidates will be required to pass an examination in Arabic. They

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will also be re-examined by the Medical Board in order to ascertain if their state of health is still satisfactory. The result of these two examinations will be laid before the Selection Board for the current year, who will approve or reject the probationary candidates.

Candidates not elected by the Board, but recommended by them, are eligible, if required, for posts in the Agricultural Bank of Egypt.

Egyptian Civil Service.—On arriving in Egypt, accepted candidates will enter on probation for one year at least, or two years at most, in any Department to which they may be appointed, with a minimum salary of £E240 per annum. At the end of two years, if they are confirmed in their appointments, they will be promoted to a salary of £E336 per annum. The Egyptian £E is worth £1 0s. 3½d.

They will not be appointed to posts in the Technical Departments, such as those of Public Works, Medicine, Justice, and Education, and their careers will mainly be in the Departments of the Ministers of Finance and the Interior.

The principal departments of the former are Land Tax, Accounts, State Lands, Post Office, Coastguard, Custom-house, Ports and Lighthouses, Survey.

The departments of the Ministry of the Interior consist of Public Security, Prisons, Public Health, and suppression of the Slave Trade.

As a rule it is only at headquarters that Englishmen occupy executive posts. In the provinces their duties are those of Inspectors and Sub-Inspectors. They have to supervise the work of the native officials, to see that orders are carried out, to report to headquarters, and to make inquiries and investigations if required. Inspectors

and Sub-Inspectors of the Interior are chiefly concerned with Public Security, while the duties of Inspectors and Sub-Inspectors of Finance are principally in connection with the land tax and the sale and renting of State lands. A certain amount of executive work, however, not unlike that of the Settlement Officers in India, is entrusted to English Inspectors and Sub-Inspectors of Finance.

Promotion must depend on the efficiency of the official concerned, but under normal circumstances an Inspector of six or seven years' service would probably be drawing from £E400 to £E600 a year. There are also certain higher posts (Police, Customs, etc.), with salaries of from £E800 to £E1,500, which have hitherto generally been filled by promotion. Liberal travelling allowances are allowed to Inspectors, whose nominal pay is thereby considerably increased.

Sudanese Civil Service.—A newly-appointed official is required to serve for the first two years on probation.

An official appointed a Deputy Inspector in the administrative branch of the service will, as a rule, proceed direct to Khartum, where he will go through a course of instruction in his future duties. As soon as he is considered fit, he will be sent to one of the provinces or employed in some departmental office.

A Deputy Inspector in a province sits as a Magistrate to deal with civil and criminal cases; he has also to investigate complaints, to supervise the collection of the revenue, and the manner in which the Police carry out their duties. He will be compelled to lead an active life, and much of his time will be spent on horse-back.

The salary of a Deputy Inspector in the Administrative branch on first appointment is £E420 per annum. A

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scale for increase of pay and rules for regulating promotion have been laid down.

Thus the Inspectorate Staff is divided into three classes.

Deputy Inspectors at £E420, £E480, and £E540; Junior Inspectors at £E600, £E660, and £E720; and Senior Inspectors at £E700, £E840, and £E900. An official is eligible for increase from one rate of pay to another in the same class every two years, and a Deputy Inspector, after having served four years as such, can be promoted to Junior Inspector, and after two years as a Junior Inspector he may be promoted to Senior Inspector.

Length of service alone, however, constitutes no claim to increase of pay or promotion, which depends entirely upon an official's abilities and the zeal with which he performs his duties. In addition to the salary there are certain allowances, such as travelling allowance, climate allowance in some of the less healthy provinces, and forage and grooms' allowances for those who keep animals.

Civilian Inspectors of sufficient seniority will be qualified for selection to Governorships of Provinces. The salaries of Governors, as at present fixed, are from £E900 to £E1,200 per annum. Most of the Governorships and some of the appointments of Senior Inspector and Inspector are filled by British Officers selected from the Egyptian Army, and a proportion of these appointments will continue to be filled from the same source.

In order to qualify for increase of pay or promotion, a Deputy Inspector is required, within two years of the date of his appointment, to pass an examination in Law and a further examination in Arabic.

Pensions.—In both services a deduction of 5 per cent. is made from pay as a contribution towards pensions. In

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the Egyptian Civil Service, pensions are calculated on the average of the last two years' salary, and the maximum pension is £E800.

Voluntary retirement with pension is permitted after forty-five years of age, provided an official has twenty years' service.

The pension is calculated on the average of the salaries drawn during the last three years of service, at the rate of one-forty-eighth of the salary for each year of service. The maximum pension obtainable is £E800.

THE FOREIGN OFFICE (INCLUDING THE CONSULAR SERVICES).—Appointments under the Foreign Office may be divided into three categories :

1. Clerkships in the Foreign Office itself and appointments in the Diplomatic Service.
2. The General Consular Service.
3. Student Interpreters in the Near East and the Far East.

Candidates desirous of competing for posts under the Foreign Office must first apply to have their names noted on the list kept by the Secretary of State for Foreign Affairs. In applying they should send to the Private Secretary at the Foreign Office a statement giving their names in full, the date of their birth, the establishments at which they were educated, and their permanent address. They must also be recommended by some person who is known to the Secretary of State, or on whose judgment the latter can rely. It is essential that the person recommending a candidate should himself be personally acquainted with him, and the recommendation should take the form of a private letter to the Secretary of State

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containing a few personal notes on the candidate's qualifications for employment under the Foreign Office. No candidate will be eligible unless he be a natural-born British subject, and born within the United Kingdom of parents also born therein. This rule is only departed from under circumstances of a special nature.

The names of those candidates whose recommendations are accepted by the Secretary of State are then placed on the list of candidates for nomination, but it should be remembered that the fact of a name being noted in no case implies the promise of an eventual nomination. Before a nomination can be granted, candidates will be required to appear before a Board of Selection, which will meet at the Foreign Office at 3 p.m. on the first Tuesday in May and November for the Foreign Office and Diplomatic Services, and on the first Thursday in May and November for the Consular and Student Interpreter Services. No special summons is issued for these Boards.

It will be the function of these Boards to recommend candidates to the Secretary of State, with whom it will rest to grant nominations.

Candidates for the Levant Service may present themselves before the Board of Selection any time after their seventeenth birthday, and for the other services any time after their nineteenth birthday.

Candidates who fail at their examination require another nomination before competing again.

1. Clerkships in the Foreign Office and Attachéships in the Diplomatic Service.—Limits of age, twenty-two to twenty-five years.

The examination is the same as that for the Home Civil Service Class I., except that both French and German are

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both obligatory, and candidates are limited to 4,000 marks instead of 6,000 marks as the maximum. The examination fee is £6.

The two careers are interchangeable, and Clerks may be appointed to Attachéships (the lowest grade in the Diplomatic Service), while the latter may be required to work for a time at the Foreign Office Headquarters in London. Attachés must, however, have an income of at least £400 a year, and for the first two years of their service are appointed to unpaid posts.

The salaries of the positions in the Diplomatic Service are very good, and there are several well-paid posts on the staff of the Foreign Office at home.

2. The General Consular Service.—Limits of age, twenty-two to twenty-seven years. Preference is given to those candidates who have either been called to the Bar or graduated at a University, or been enrolled as Solicitors, or served three years in a Commercial House.

The subjects of examination are as follows, and candidates must pass in all of them :

	Marks.
English Composition, including Handwriting, Spelling, and Précis	300
French (written and oral)	300
Either German or Spanish (written and oral)	300
The Principles of British Mercantile and Commercial Law relating to (a) Shipping, (b) Negotiable Instruments, Bills of Exchange and Promissory Notes, (c) Contracts of Marine Insurance, Bottomry, and Respondentia	200
Arithmetic, to Vulgar Fractions and Decimals, including English and Metrical Weights and Measures	100
Commercial Geography... ..	200
Political Economy, its general principles, and their application to currency, the money market, foreign exchanges, and taxation	200

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The examination fee is £4.

All persons who have passed their examination before the Civil Service Commissioners will be required, as far as practicable, to work for at least three months in the Foreign Office and in the Commercial Intelligence Branch of the Board of Trade before proceeding to their posts, in order that they may become acquainted with the forms of business as carried on there.

During this probationary period they receive pay at the rate of £150 a year. Successful candidates are appointed Vice-Consuls at £300 a year, rising by £20 to £500 a year with allowances. A new scheme has been adopted in principle for grades and salaries, but it will be some time before it is brought into full operation. Eventually there will be Consuls General at £1,000, as the first grade. The second grade will be Consuls-General and Consuls with about £800, and the third Consuls and Vice-Consuls with about £600.

A Consul's pay can rise to £1,100 with house-rent and allowances in addition, whilst a Consul-General may receive £2,000 a year besides allowances.

3. Student Interpreterships. — Student Interpreterships are Junior Consular Appointments in certain countries where additional special training is required with regard to language and consular routine, and the ultimate aim of all such Interpreters is to be appointed to the higher Consular posts in the countries concerned.

Interpreterships in the Far East are for China, Japan, and Siam ; and those in the Near East for the Ottoman Dominions, Greece, Persia, and Morocco.

Interpreterships in the Far East.—Limits of age twenty-one to twenty-four years. Candidates are required to attend at the same examination as that for appointments

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in the Home Civil Service Class I. As for the Foreign Office, a maximum of 4,000 marks instead of 6,000 marks is obtainable. French is obligatory, and a high standard is required in translation, composition, and oral examination. The examination fee is £6.

Successful candidates are first appointed as Temporary Assistants at a salary of £300. Promotion is then to Second Class Assistants £350, and First Class £400 finally to Consular appointments.

Interpreterships in the Near East.—Limits of age eighteen to twenty-four years. In this examination nothing is of much account but languages. The subjects of examination are :

<i>Compulsory :</i>					Marks
Handwriting and Orthography	...	...	...	...	200
Arithmetic	...	...	...	...	300
English Composition	...	...	...	...	200
French	...	...	...	...	600
Latin	...	...	...	...	400
<i>Optional :</i>					
Greek	...	...	...	...	400
Italian	...	...	...	...	300
German	...	...	...	...	300
Spanish	...	...	...	...	300

The marks are so arranged that unless a candidate takes up all four optional subjects he has no chance of being successful.

Examination fee, £4.

Successful candidates are required to go to a University for a course of study prescribed by the Foreign Office. They reside there as members of the University for not less than seven months in the year during two consecutive years—viz., two months in each year of the Winter Terms, seven weeks in the Easter Term, and five weeks during the

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Long Vacation. At least six weeks in each year must be spent in France, with the object of improving their knowledge of French. During their residence at the University they are called on to pass examinations, success in which is requisite to qualify them for continuance in the service. Their seniority in the service will depend upon the result of the final examination held at the University. The course of studies includes Turkish, Persian, Arabic, French, Russian, Turkish and Persian History, and the elements of English Law. They also have to give a bond for £500, in case of leaving the service of their own free will, or being discharged for misconduct or neglect, within five years.

A salary of £200 per annum is paid to them conditionally on passing satisfactory examinations during their term of probation at the University. This salary will cease at the expiration of two years from the date of their first residence at the University, and students will not commence to draw salary as Assistants until they have passed the requisite examination before the University authorities.

On being appointed as Assistants the salary is £300 per annum. Promotion is to Vice-Consuls with salaries up to £500, then to Consuls with salaries up to £1,250, with allowances in both cases.

VIII

ENGINEERING

THE Engineering profession offers great and increasing opportunities, but, to ensure success, it demands special qualifications. There is at the present time a rush towards the profession; parents whose sons can take a mechanical toy to pieces forthwith conclude that they are predestined to become engineers, and boys who dislike book-learning and the steady routine of school clamour for the more attractive interests of the workshop. Parents cannot be too clearly warned that their sons must, first of all, have a good, sound, general education, before they can hope to succeed in the profession. Before leaving school a lad should have a thorough knowledge of Arithmetic, Algebra, Geometry, and Plane Trigonometry, should be well acquainted with the main principles of Physics and Chemistry, and should have gone through a course of Freehand, Model, and Geometrical Drawing. A knowledge of Latin, and of one modern language, at least, French, German, or Spanish, is most desirable, and if a lad has laid a good foundation in both languages, all the better. If boys leave school without this preliminary training, the majority of them will always be seriously handicapped; a genius, of course, will transcend all limitations; the ordinary lad, who leaves school without a

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decent general education, may become a good craftsman or superior artisan, but he will never rise to the higher positions in the profession, as Draughtsman, Manager, Superintendent, Inspector, or Consulting Expert. The Right Hon. Henry Hobhouse, a member of the Consultative Committee of the Board of Education, speaking a few years ago at the annual dinner of the Institution of Mechanical Engineers, said that we must not forget that it was only on the firm bedrock of general education that we could erect any system of scientific instruction that was worthy of the name. Stress has been laid on the importance of a knowledge of one or more modern languages, because valuable opportunities of work abroad present themselves to the young engineer who can speak French, German, or Spanish.

NEEDFUL QUALIFICATIONS.—Assuming, then, that a lad on leaving school, not earlier than sixteen, and better at seventeen or eighteen, has this sound preliminary training, we may next inquire what further qualifications are desirable. He should possess a robust physique, for he must face early hours and hard work ; he should have a love of machinery and a taste for mechanical pursuits, and be skilful with his hands. A lad should also show promise of ordinary tact and common sense, for he must learn how to manage men, if he is to be a success when put in charge of any important undertaking ; however excellent his scientific skill may be, if, when placed in a position of responsibility, he cannot handle his subordinates properly, he is useless from the commercial point of view. However, this important quality of tact may be largely acquired under the practical conditions of work in the “shop.”

WHAT DOES THE TERM "ENGINEER" COVER?

—There are seven main branches of the profession, viz. :

1. **Civil,*** *i.e.*, constructive engineering, with its many subdivisions, railways, harbours, docks, waterworks, sewage works, surveying, etc.
2. **Mining** engineering (including oil engineering), involving knowledge of geology, sinking of shafts, extraction of metals from their ores, etc.
3. **Mechanical**, including the construction of all kinds of machinery.
4. **Naval**, or shipbuilding.
5. **Electrical**, with its six subdivisions of (1) Electric lighting. (2) Electric traction. (3) Power transmission. (4) Telegraphy and telephony. (5) Wireless telegraphy. (6) Electro-chemical work.
6. **Motor Engineering**.
7. **Aeronautics**.

These various branches overlap one another to some extent ; for instance, the Civil Engineer will need the help of the Mechanical Engineer to construct his bridges, for his locomotives, cranes, pumping machinery, etc. So, too will the Mining and Naval and Electrical Engineers all need

* The term "Civil" is used in this classification in its popular and limited acceptance. This is not its scientific and proper meaning. Civil engineering comprises all branches of engineering ; it deals with every department of the profession that has to do with the life of citizens as distinct from soldiers. The Civil Engineer is a civilian engineer—that is to say, a practitioner of any branch of engineering except military engineering. It is in this wider meaning that the term is understood in the constitution of the leading engineering society, the Institution of Civil Engineers, which has a roll of 8,000 members, representing all the different branches of the profession.

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to be conversant with mechanical engineering. We may therefore say that mechanical engineering is important for all branches, and that it is emphatically important for the electrical branch, for the chief qualifications of an Electrical Engineer is that he should first be a Mechanical Engineer. Sir Alexander Kennedy, then President of the Institution of Civil Engineers, in the course of a recent address, said that there was a great temptation to young men starting on an engineering career to make up their minds that there was one particular department of engineering in which they were definitely interested, and they did not care about any other part. If there was one thing that was fatal to the probability of success of an engineer in practical work it was the idea that he should specialize when he was very young. This was an American idea, and the justification for it was that every engineering department was so big that a man had better devote the whole of his life to the study of one particular branch of it, and then he might get to know that thoroughly. There might be something in the argument, but nearly all the men who were best known in the engineering profession were not working at the particular branch at which they started.

The student who devoted himself to one branch would in a few years become antiquated, because something new was always coming to the front. There would be a time when wireless telegraphy would be as common as the domestic telephone, and he advised students not to narrow their ideas to one particular branch. The British engineer owed his success to the fact that he did everything that came to his hand, whether it was his particular branch or not, and there could be no doubt that the best way was to become a thoroughly good all-round man.

HOW BEST TO ENTER THE PROFESSION.—This is a moot point on which authorities differ. All are agreed that practical work in the shops is, at an early or later stage, absolutely imperative, and all, too, are agreed that, if a youth is to be something more than a skilful mechanic, he must pass through a course of adequate scientific training. Difference of opinion arises when we face the question as to which is the best method of securing these two requisites—practical skill and scientific theory. The old system has been for a youth to enter “works” about sixteen or seventeen as a premium-paying pupil, pass through all the departments until he reaches the drawing office and pick up his scientific knowledge as he goes along by attending evening classes, etc. This is the system which some experienced engineers still advocate. The trend of feeling, however, among a majority of the ablest men at the present time is in another direction. They demand a clearer recognition of the claims of systematic training in scientific theory. They realize that our commercial supremacy is being seriously challenged in the markets of the world by Germany, America, and Switzerland, and they believe that one of the reasons of this is that these countries give a better scientific training to those who are to become engineers. The result of this better scientific training is that the American or German is often more resourceful, more equal to the occasion, than the Britisher. The following words were recently spoken by a President of the North-East Coast Institution of Engineers and Shipbuilders: “It is not reassuring to find that in most chemical industries we are largely outstripped by our neighbours across the water. Even our armour plates are made under foreign patents. The fastest ship crossing the Atlantic is not an English ship. It is a

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German flag that flies at the masthead. You will find our electrical stations, go where you will in England, perhaps filled with English engines, but not with English electrical machinery. To-day, for our smelting works, numbers of orders have been given for gas-engines to be driven by blast-furnace gas, and the engines are not designed by England. I think these are lessons that we all ought to take to heart."

These words were spoken about ten years ago. Happily, since then, our country has made great strides forward: since then, the *Lusitania* and the leviathan *Mauretania* have won back for us the laurels of the Atlantic: since then, a clearer appreciation of the value of scientific methods has become more widely extended among many of the best and most progressive firms in the country; here and there able men still advocate the old "rule-of-thumb" system, but its day, we trust, is done, for the general question of higher education in science depends very largely upon the attitude assumed by employers.

In November, 1903, a very important Committee was appointed to consider and report to the Council of the Institution of Civil Engineers upon the best methods of training and education of all classes of engineers. That Report was issued in 1906, and a copy should be procured from Messrs. W. Clowes and Sons, 23, Cockspur Street, S.W.; price 6d., by post 7d. Sir William White was the Chairman of the Committee, and among the other members were Sir John Wolfe Barry and Sir Alexander B. W. Kennedy. The Committee insist—and to this we would draw the attention of parents—upon the absolute necessity of a sound general education.

The Report outlines a course of preparatory training in which it is suggested that a boy intended for the engineering profession

should, before leaving school and commencing to specialize, have attained a standard of education equivalent to that required by the Institution Studentship Examination. He should not commence his special training until he is about seventeen years of age. A leaving examination for secondary schools, similar in character to those already existing in Scotland and in Wales, was desirable throughout the United Kingdom, and the standard should be such as could be accepted by the Institution as equivalent to the Studentship Examination, and by the Universities and Colleges as equivalent to a Matriculation Examination. Greek should not be required, but an elementary knowledge of Latin was desirable. Modern languages, especially French and German, should be studied, and should be taught colloquially, or in such a way as to give the pupils a practical knowledge of each language, sufficient to enable them to study its literature and to converse in it with some degree of facility. Instruction in mathematics should be given by methods differing considerably from those usually adopted in the teaching of this subject merely as an intellectual exercise. The geometrical side of mathematics should be fostered, and instruction in practical arithmetic should be carried further than has been generally the case hitherto, with the object especially of encouraging the use of contracted methods and operations in mental arithmetic. Several other suggestions are made, and it is recommended that the whole scheme should be officially communicated to the Board of Education and widely circulated amongst those engaged in the conduct of secondary schools and engineering colleges, in order to assist in the removal of one great difficulty now universally felt in institutions where applied science is taught. "At present," the Committee say, "a considerable proportion of students enter technical institutions ill prepared, and at least one year has to be devoted to instruction which ought to have been procured beforehand."

PRELIMINARY TRAINING IN THE WORKSHOP.

With regard to the subsequent work of engineering training, the Committee recommend that the average boy intending to take up the profession should leave school when he is about seventeen years of age. The minimum should be sixteen, and the maximum eighteen years. Practical training should be divided into two parts, and the preliminary stage should consist in all cases of at least a year spent in mechanical engineering workshops. "It is recognized," say the Committee, "that at present there are practical difficulties in

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arranging for this workshop year being interposed between the school and college work, and that employers may consider the arrangement objectionable in their interests." On the other hand, the Committee suggest that these difficulties should not be insurmountable, and the general agreement as to its advantageous effect on training leads them to hope that practical trial may be given to the suggestion. During workshop hours boys should keep the regular working hours, should be treated like ordinary apprentices, be subject to discipline, and be paid wages. Nothing should be done in the form of evening study which would impose undue strain upon the physique of boys, because in some cases this might prevent attendance at evening classes; but experience showed that many boys could attend such classes without physical injury, and with great educational advantage. "The Committee think," the Report proceeds, "that all boys should, at least, maintain their scholastic acquirements during the introductory workshop course, and, for the class of boys in question, it is considered that this result might be secured, by private tuition or otherwise, without undue physical strain."

THREE YEARS AT COLLEGE.

As a rule it was preferable to proceed from the workshop to a Technical College or a University, and for the average student the period of college study should be three sessions. In the case of students who desire to follow up the science of their profession, a fourth year might be added. A sound and extensive knowledge of mathematics was necessary in all branches of engineering, and it should be possible for the average student to master sufficiently during the common course of instruction for all engineering students the subjects included under the category of pure mathematics. Then at least three to four years should be spent in practical training, inclusive of the "introductory workshop course." The Committee favour a total period of four years' practical training where it can be secured, and it was highly desirable that a part of this practical training should be obtained in drawing offices, for the Committee recommend strongly efficient instruction in engineering drawing.

How then, under present conditions, can a parent best proceed? The choice lies before him of one or other of the following courses:

I. THE PUPIL APPRENTICE SYSTEM.—The pupil-apprentice or pupil (as opposed to the working apprentice, whose aim is to be a craftsman) will enter “works” about the age of sixteen or seventeen, on payment of a premium. The premium will range from £50 to £100 per annum, which is generally returned, in part, in the form of a small weekly wage, and the period of pupilage will extend from three to five years. It is very important that a firm of high standing be selected, where a youth may have an opportunity of passing through all the departments before he enters the drawing office.

The drawbacks of this system are threefold. The premium is a heavy strain upon the resources of the average parent. A lad in many firms is largely left to his own devices; an earnest lad will no doubt profit by the guidance of the foremen and by the experience he gains, but a lazy youth may easily waste his opportunities. Then, finally, there is the difficulty of scientific training; after a long day in the “works” few boys are physically fit for intellectual effort in attending evening classes during the period of pupilage, and, if the study of scientific theory is postponed until pupilage is over, a lad finds that the knowledge he possessed when he left school has become rusty.

The above system will apply mainly to the lad who intends to become a mechanical engineer, using the term mechanical in its widest application.

If he intends to become a Civil or a Mining Engineer he may be placed as a pupil in the office of a Civil or a Mining Engineer of standing at a premium of £100 to £500 for an apprenticeship of three to five years. His difficulty, again, here will be to secure a good training in theory; this he can best do by attending evening classes.

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If his aim is to be an Electrical or Motor or Aeronautical Engineer, then, as we have stated before, it is absolutely essential that he should lay a firm foundation of practical knowledge of prime movers and mechanical construction, and he should pass, sooner or later, through a course of practical training in the works of a firm of engineers.

II. HIGHER TECHNICAL TRAINING.—A youth following this system would remain at school until seventeen or eighteen, and then proceed to a University, a College, or Technical Institute, for a three years' course of training in scientific theory. At the close of his University or Technical College course he would enter "works" for two years or more as an "improver," either paying a small premium, or, if he possessed conspicuous scientific knowledge, possibly receiving a small wage. If he showed grit and practical skill, he would quickly find himself in a position to which a good salary was attached.

The drawback of this system is that, for several important years of a lad's life, the knowledge of scientific theory has to be sought at the expense of practical work in the actual "shops." Some of the best Technical Institutions try, to some extent, to remedy this drawback by having engine rooms and workshops in which theory may be applied to practice, and earnest men, while they are passing through the course of the Technical College, seek every opportunity of spending a few months in "works" during the vacations.

These efforts have their value, but by themselves they are inadequate. The course of scientific training must be linked, before or after, with a period of practical training in "works." Upon the absolute necessity of this practical experience we cannot be too insistent. Without it a man, however elaborate his knowledge of scientific theory, can

never be an effective engineer. Professor Jenkin, the Professor of Engineering at Oxford, pertinently puts the case: "Can a doctor or surgeon practice on a lay figure and do without his hospital training? Can a sailor learn seamanship in a college tank? Or a barrister learn to plead in a model law court? The doctor can be taught Physiology, Anatomy, and all the wide range of science he now needs: the sailor can be taught Astronomy and Navigation: the barrister can be taught Law; but the rest they must learn during some form of apprenticeship, whether it be called 'walking the hospital,' 'serving his time,' or 'devilling.'"

The system undoubtedly has its weak side, but if a young fellow is determined, after his course at College, to take his coat off, and gain thorough practical knowledge in "works," he may look forward with confidence to a successful career.

It may be well to bear in mind that this is the system that obtains in America; they are content there to take "long views," and their patience is rewarded by the production of resourceful and highly-trained men. A youth in America remains at school until he is eighteen, then proceeds to a University or Professional Institution, whence he graduates after a four years' course. He then spends two years as an apprentice with an engineering firm. The demand for these graduate-apprentices is greater than the supply. Mr. Mullineux Walmsley writes: "Employers offer a living wage at the start of the service, and do not charge any premium. As a rule, it may be said that the competent College graduate very quickly rises above the bare living wage at which he is taken on. In most cases, the end of the first six months finds him advanced to a much more highly paid position, and within

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two years from leaving College the best of the men occupy well-paid and responsible posts."

Professor Ripper, a member of the Moseley Commission, writes, on the same subject, as follows :

"Whatever the prejudice may be in some quarters, there is no mistaking the fact that, great as is the annual output from the colleges, the demand for college-trained men is greater than the supply.

"The Pennsylvania Railroad, which is the most advanced railroad company in America, has made it a *sine quâ non* that the new appointments to all the executive positions shall be men with an engineering college training, and the majority of the officials on the general staff are men with college degrees. The example of this company is being followed by many other railroad companies, who are in constant communication with the colleges for the supply of skilled assistants. In most of the colleges all their graduates at the end of the fourth year are secured by various companies before their college term is completed, and the usual remark on the part of the authorities was, 'We could place twice as many men if we had them.' Electrical firms especially keenly compete with each other for the best men, and representatives from the firms call at the colleges and select men by personal interview. The manufacturer comes to the college, the college does not go to the manufacturer.

"All this is in very marked contrast to the condition of things a few years ago. Formerly letters of application for students specified that they must have had practical experience; now the employers write to say that the student must have had a sound scientific education; they will see that he receives a practical training.

"In all cases young men engaged from the colleges are started at a living wage, so that they are at least able to maintain themselves at once.

"In America at the present time the colleges are filled with students of a senior type, who are receiving an advanced and thoroughly sound training, and it is business concerns led by these men with which the British manufacturer will have to compete. The question for our country to ask itself is : Are we preparing the British youth of to-day to compete successfully with his commercial

rival? It must be confessed that, so far as the study of science as applied to industry is concerned, our position at present is inferior to that of America."

It is perhaps one of the most encouraging signs for the future of engineering in this country that employers are beginning to realize the importance of scientific training, and when they are ready to admit the highly-trained man of twenty-one or twenty-two into their "works" on advantageous conditions, they will probably find that he may be of more value to the firm than the premium-paying pupil who knows nothing of scientific theory.

A Higher Scientific training may be obtained :

AT OXFORD.—The School of Engineering Science is now firmly established under the enthusiastic guidance of Professor C. F. Jenkin, the first occupant of the Chair of Engineering. In an inaugural lecture, delivered on October 16, 1908, Professor Jenkin explained the principles on which the School of Engineering at Oxford would proceed. He deprecated the attempt that was being made in modern Polytechnic Schools to try to supply the practical training which the old system of apprenticeship in works afforded. This training could not be adequately given at a University or Technical College ; it could only be obtained in works and nowhere else, so their purpose at Oxford would be to teach the Science or Theory of Engineering, and to leave the experience to be learnt during a subsequent apprenticeship.

An important feature is made of the Course in Surveying, four or five weeks during the Long Vacation each year being spent in practical field-work under the direction of Mr. N. F. Mackenzie, Instructor of Surveys to the University.

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“Engineering Science” is one of the subjects of the Final Honours School of Natural Science.

With certain exceptions (for which see *University Handbook*, 2s. 10d. post free) a candidate must first pass a Preliminary Examination. The Preliminary Examination includes :

- (1) Mathematics.
- (2) Mechanics and Physics.
- (3) Chemistry.
- (4) Zoology and Botany.

A candidate must pass in two subjects, and, of course, in the case of an engineering student, they would be (1) and (2). He can present himself for the Preliminary Examination at any time after he has passed Responsions, and can take his subjects separately at different examinations, or together at the same examination.

He can then work for the Final Honours School in “Engineering Science.”

Every candidate will be required to offer all the subjects included in Section A of the following schedule, and may in addition choose a Special Subject from those included in Section B.

It is not necessary for the attainment of the highest honours that any special subject should be offered, but in the assignment of such honours weight will be attached to excellence in a special subject, or in Mineralogy if it be offered as a supplementary subject under the provisions of clause 10 of the Statute. Such excellence may, at the discretion of the Examiners, compensate for comparative deficiency in some other part of the examination.

Candidates offering a special subject must give notice of their intention to the Assistant Registrar, and specify the

subject, before the end of the seventh week in the Michaelmas Full Term preceding the examination.

The Examiners shall have power to indicate in the Class List any special subject in which a candidate may have distinguished himself in the examination.

The stated subjects shall be distributed over nine papers as follows :

Section A.

1. Mathematics.
2. Physics.
3. Applied Mechanics.
4. Strength of Materials.
5. Surveying.
6. Applied Chemistry.
7. Structural Design.
8. Heat and Heat Engines.
9. Electrical Engineering.

Section B.

10 and 11. Special Subjects—

- (a) Engineering Chemistry and Metallurgy.
- (b) Geology.

There shall be no paper in practical work in any of the stated subjects except Physics, but value will be attached in the examination to records (certified by the Professor or some other person approved by the Board) of the laboratory work done by candidates during their Engineering and Chemistry courses.

Special courses for Engineering Students in Chemistry and Physics, as far as necessary, are supplied in the University laboratories.

Those preparing for mining work may take, in addition to Mineralogy and the Special Subjects mentioned above

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under Section B, a course of Mining Ventilation and Hygiene.

Intending students should apply to Professor Jenkin, the University, Oxford, for further details.

AT CAMBRIDGE, where the Mechanical Sciences Tripos is drawn up to this end.

Residence—three years. Total cost from £400 to £600, according to a man's mode of living.

Every candidate for the Mechanical Sciences Tripos is required to pass a qualifying examination in Mathematics and Mechanics not later than the beginning of the second year, unless he has already obtained honours in some other Tripos, or has been admitted as an Advanced Student. This examination is held twice a year, in October and June, and a student who fails to pass the examination may be a candidate on a second occasion, provided he is then otherwise qualified. The examination consists of two papers, and a candidate must pass in both. He can then proceed to the Tripos, which may be passed at the end of his second or third year of residence, but he cannot proceed to his B.A. degree until he has completed three years of residence; in the case of an Advanced Student, a residence of two years suffices. The Tripos Examination consists of eleven papers, as follows:

Group A.

Applied Mechanics.
Heat and Heat Engines.
Theory of Structures and
Strength of Materials.
Electricity and Magnetism.
Drawing.
Essay.

Group B.

Applied Mechanics.
Theory of Structures and
Strength of Materials.
Heat and Heat Engines.
Electricity and Magnetism.
Engineering Chemistry.

All the papers of Group A must be taken; the papers of Group B are harder, and need not be taken to pass;

but the Regulations provide that in order to obtain a First Class a candidate must do well in two of them.

A candidate for the Mechanical Sciences Tripos should get clear of the Previous and of the Qualifying Examination in Mathematics and Mechanics as soon as possible, and he will then be free to devote himself to his Tripos.

The *Student's Handbook to Cambridge*, which should be consulted for detailed information (3s. net, Cambridge University Press), states: A student who obtains honours in the Mechanical Sciences Tripos at the end of his third year is entitled to his B.A. degree, and possesses a professional qualification in respect of scientific knowledge, which is held in high esteem by engineering employers, and in particular is accepted by the Institution of Civil Engineers as sufficient for its Associate Membership. The practical experience, which is necessary for every engineer in addition to the theoretical knowledge, is in most cases obtained subsequent to graduation in the course of an apprenticeship lasting two or three years in some engineering works. During this period the apprentice earns small wages, ranging from 5s. to 30s. per week. Occasionally the employer requires a premium, but it is found that the majority of Cambridge engineering students can obtain apprenticeships without payment of a premium.

Engineering students at Cambridge enjoy the privilege of the teaching of two eminent scientists, Sir J. J. Thomson, Professor of Experimental Physics, and Professor Hopkinson, Professor of Mechanism and Applied Mechanics.

There is no doubt that the possession of a Cambridge degree in the Mechanical Sciences Tripos carries with it

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a unique status : it is a high-class qualification to which the attention of parents may wisely be directed.

For students who have not sufficient knowledge of Mathematics and Mechanics to pass the qualifying examination for the Mechanical Sciences Tripos, there is another course by which they proceed to the Ordinary Degree in Engineering. For this they are required to pass the General Examination, or one of the Special Examinations permitted as an alternative (see the *Student's Handbook* or the *University Calendar*), and also the Special Examination in Mechanism and Applied Science. This examination is of a more elementary and less mathematical character than the Tripos. It is divided into two parts. In Part I. three papers are set, to be taken by all candidates—namely :

1. Practical Mathematics.
2. Descriptive Mechanism.
3. Surveying, being a practical examination in field and office work.

In Part II. three papers are set, which all candidates must take :

1. Elementary Applied Mechanics.
2. Mechanical Drawing.
3. Workshop Practice.

And each candidate is further required to present himself for examination in one or more of the following :

- 4a. Heat and Heat-Engines ;
or—
- 4b. Strength of Materials and Elementary Theory
of Structures ;
or—
- 4c. Electricity.

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And shall also pass a practical laboratory examination in the selected subjects.

The ordinary course for the Special Examination in Mechanism and Applied Science occupies five terms, two being devoted to the first part and three to the second part. A student proceeding to the Ordinary Degree is recommended to take the Special Examination in Chemistry, Physics, or Geology. Preparation for this will occupy his first four terms, and he can then commence the study of Engineering in the Lent Term of his second year. A student who proceeds to his degree after passing the Special Examination in Chemistry, Physics, or Geology, followed by the Special in Mechanism and Applied Science (taking, if possible, two of the above-mentioned alternative subjects in the latter) will have acquired a good all-round knowledge of scientific principles, and of their application to Engineering problems.

Intending students should apply for fuller information to Professor Hopkinson, the Engineering Laboratory, Cambridge.

AT THE UNIVERSITY OF LONDON—The Imperial College of Science and Technology.—The Imperial College was incorporated under Royal Charter, July 8, 1907, and has its principal seat at South Kensington. Its purposes are to give the highest specialized instruction, and to provide the fullest equipment for the most advanced training and research in various branches of science, especially in its application to industry. It includes as integral parts the Royal College of Science, the Royal School of Mines, and the City and Guilds College.

THE CITY AND GUILDS COLLEGE, Exhibition Road, London, S.W., forms the Engineering Section of

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the Imperial College, and is included as a School of the University of London in the Faculty of Engineering. Although the instruction is to a large extent practical this is not intended to supersede the necessity of obtaining practical experience in the workshop or factory, but a well-instructed student will be able to acquire this practical experience easily and rapidly by a pupilage of, say, two years' length, after going through the course prescribed for students of the College. The College comprises laboratories, drawing offices, and workshops, in addition to the lecture theatres and class-rooms.

Candidates are admitted on passing the Matriculation Examination of the College, which is held in September, and is open to all persons who are not less than sixteen years of age at the date of the examination. On the results of the examination several valuable scholarships are awarded. The compulsory subjects are Mathematics and Mechanics, English, French or German, and any two of the following: Mechanical Drawing, Physics, and Chemistry. Candidates may attempt all the six subjects, and it is desirable that they should do so, as, in consequence of the rapidly increasing number of candidates presenting themselves, the examination, even for entry, is becoming competitive. Therefore, in order to secure admittance, it is becoming necessary for a candidate to satisfy the examiners in *all* the subjects. Under certain conditions the Matriculation Examination of the University of London is accepted as equivalent to the College Examination.

The fees for the Diploma Courses in Civil, Mechanical or Electrical Engineering to be pursued by a matriculated student are £38 per session, payable in advance. There are also Special or Partial Courses, to which the student

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will be admitted on satisfying the Board of Studies that his knowledge and experience will enable him to follow, at any rate, the Second Year's Course in the department which he desires to enter, and, furthermore, Advanced Specialized Courses for post-graduate and other duly qualified students. Details of the fees for these and further information may be obtained from the Registrar, City and Guilds College, Exhibition Road, London, S.W.

UNIVERSITY COLLEGE.—The Engineering School is splendidly equipped. Composition fee for three years' course, 120 guineas, payable in three instalments—viz.: 1st Session, 45 guineas; 2nd Session, 40 guineas; and 3rd Session, 35 guineas. The Engineering Department includes Lectures, Drawing Classes, and practical work in the laboratories. The practical training given in the various Engineering Laboratories is specially arranged to make the students intimately acquainted with the nature and testing of the materials which they have afterwards to use in construction, the testing and use of the instruments for electrical measurements, the working of engines, dynamos, and machines, etc., under widely differing conditions, economical and uneconomical, and, generally, with the manner in which experiments in matter relating to Engineering Science are carried out.

General Certificate of Engineering.—To those students who have attended classes in the Engineering Department for not less than two consecutive Sessions, and whose attendance, conduct, and progress are considered satisfactory by the Faculty of Engineering, the College grants a General Certificate of Engineering. This certificate contains a list of all the Classes in the full Engineering Course, and shows which of them the student has attended

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with the Class Certificates or other Honours which he has taken in each. It mentions also any Scholarship or Special Prize obtained by the student and any special work done by him (in laboratories or otherwise) during his stay at the College.

University Degree in Engineering.—Students are strongly recommended to enter for the degree of Bachelor of Science in the Faculty of Engineering (B.Sc.) granted by the University of London. Three examinations must be passed—the University Matriculation, Intermediate, and Final.

The Diploma Courses include all the subjects necessary for degrees in Engineering.

Students entering for a Diploma Course are required to have passed the College Engineering Matriculation.

There are many valuable scholarships. Apply to the Secretary for full particulars.

AT KING'S COLLEGE.—The Faculty of Engineering provides a course of study of University character for those intending to devote themselves to Engineering, Chemical Manufacture, or Metallurgy. It is so arranged as to give preparation for those wishing to take the B.Sc. in Engineering at the University of London.

All Students who intend working for the B.Sc. degree are strongly advised to sit for the Matriculation Examination of the University (held each year in January, June, and September) before entering the College in October. They can be registered as Internal Students of the University of London, and are eligible to take the Intermediate Examination in the College. It is also very important that the subjects taken for Matriculation should include Mathematics (more advanced) and a Science

Subject, otherwise the examination is not accepted by the Institution of Civil Engineers in lieu of their own Student-ship Examination.

The Academic Year is divided into Winter and Summer Sessions, the former extending from October to Easter, and the latter from May to July.

The scientific principles which underlie all branches of Engineering, together with the methods of applying those principles, are taught in the following carefully arranged and graduated courses :

(1) A Four Years' Course for Mechanical and Electrical Engineers, the Winter Sessions being passed in the College and three Summer Sessions in "works." (2) A Three Years' continuous College Course for Mechanical and Electrical Engineers. (3) A Four Years' Course for Civil Engineers, a portion of the time being passed in "works." (4) A Three Years' continuous College Course for Civil Engineers.

The Composition Fees for a course of either three or four years are fifty guineas per annum if paid in one sum at the commencement of the year, or fifty-two guineas per annum if paid in two instalments. There is also an entrance fee of five guineas, which includes fees for library, athletic ground, locker, and calendar.

Full particulars as to Scholarships, etc., may be obtained from the Secretary.

THE UNIVERSITY OF MANCHESTER.—Manchester claims to be among the oldest of the University Schools of Engineering. The University receives from the Treasury a grant of £15,000 a year. There are about a hundred students in the Engineering Department at the University, besides a very large number at the

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School of Technology. In Engineering, Electro-Technics and Metallurgy the University employs a staff of eleven professors, lecturers and demonstrators, and in the School of Technology there are twenty-four in Engineering and Metallurgy and twelve in Textile Manufacture.

Manchester is situated in the midst of what is one of the largest engineering districts in the world.

The intending student of engineering may enter either the Faculty of Science, the courses for which are given in the University buildings and qualify for the degree of B.Sc., or the Faculty of Technology, the courses for which are given in the School of Technology and qualify for the degree of B.Sc.Tech.

In the *Faculty of Science* there are three alternative courses. He may work for (1) the Honours degree, (2) the Ordinary degree or (3) the Certificate. Before commencing courses (1) or (2) the student is required to have passed the Matriculation Examination. For the Honours degree there are two University Examinations; Part I., which is taken at the end of the second year, and Part II., at the end of the third year. For the Ordinary degree the University Examinations to be passed are the Intermediate and the Final at the end of the first or second, and third years respectively. For the Certificate it is not necessary to have passed the Matriculation Examination, but before entering upon the course the student is required to pass an Entrance Examination in Elementary Mathematics, English, and one other language. The Certificate is obtained after completing a three years' course and passing an examination at the end of the third year.

The Engineering Laboratories are in the University buildings. The new Whitworth Laboratory, opened in

1909, is well equipped with machinery illustrating the latest developments in engineering practice. The buildings are subdivided into Boiler House, Thermodynamic, Testing Hydraulic and Research Laboratories; Drawing Offices and Workshop. The new John Hopkinson Electrical Engineering Laboratory, opened in 1912, provides for instruction in the testing and working of all the more important types of electrical plant.

For the student in Civil Engineering the Laboratories are provided with facilities for large scale experiments on structures. Practical training in field work is provided in specially arranged courses given during the summer months. Besides the ordinary academical staff, courses of lectures are given throughout the session by an eminent Civil Engineer in practice, and short courses are given by several prominent engineers actively engaged in professional work.

In the *Faculty of Technology* the student may take (1) a course qualifying for the degree of Bachelor of Technical Science (B.Sc.Tech.) or (2) a course qualifying for a Certificate in any one of the following divisions of Technology: Mechanical, Electrical, or Sanitary Engineering; Mining, Textile Industries. For the degree there are two University Examinations in addition to the Matriculation Examination; the Intermediate, taken at the end of the first or second years, and the Final at the end of the third year. Candidates who are placed in the first division at the Final Examination are awarded Honours. For the Certificate it is necessary to pass an Entrance Examination and a Final Examination at the end of a three years' course.

The Laboratories are in the buildings of the School of Technology. They are provided with an excellent equipment of full size machinery in the departments

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of mechanical, electrical, and sanitary engineering, with large mechanical and plumbing workshops. In Textile machinery, the equipment is probably unique and not excelled at any teaching institution in Europe.

In Mining, students may take courses satisfying conditions for the degrees of B.Sc. with Honours, Ordinary B.Sc., B.Sc.Tech., or the Certificate. The practical training is obtained in the case of coal-mining at a convenient colliery, and the metal-mining at the Camborne Mining School.

An Honours course in Metallurgy has recently been instituted. The course covers three years work, and involves, besides the Matriculation Examination which must be passed before entering upon the course, a Final Examination at the end of the third year.

The Registration Fee for students (who must have attained the age of sixteen) is, first year, £2 2s.; second year, £1 1s.; third year, £1 1s. The average cost of the Engineering course is from £25 to £30 for the session. There are valuable Scholarships and Fellowships. Further information will be supplied by the Registrar.

UNIVERSITY OF LIVERPOOL.—The courses of study in the Faculty leading to the Ordinary degree of Bachelor of Engineering extend over at least three years. They are so arranged as to afford a general scientific training for those who intend, with or without graduating, to become engineers, naval architects, and surveyors.

A fourth year of study is arranged leading to the examinations in the various Honours Schools (B.Eng. with Honours) and the Diploma in Engineering.

Candidates for a degree must have passed, or have been exempted from, the Matriculation Examination (Faculty of

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Engineering) of the Joint Board representing the Universities of Manchester, Liverpool, Leeds, and Sheffield.

*Matriculation Examination (Faculty of Engineering).—*Candidates presenting themselves for the Matriculation Examination for entrance to the Faculty of Engineering are required to enter for, and satisfy the Examiners in, the following subjects :

1. English Language and English Literature.
2. English History.
3. Mathematics with Additional Mathematics or the Higher alternative paper in Mathematics.
4. *Either* Mechanics or Physics.
- 5 and 6. Two of the following, *one* of which must be a language :
 - (i.) Greek.
 - (ii.) Latin.
 - (iii.) French.
 - (iv.) German.
 - (v.) Some other language approved by the Board.
 - (vi.) Chemistry.
 - (vii.) Geography (Physical, Political, and Commercial).
 - (viii.) *Either* Natural History (Plants and Animals) or Botany.

Candidates who have passed the Matriculation Examination in six subjects, but have not included (a) Additional Mathematics, (b) *Either* Mechanics or Physics, may pass in these subjects separately.

The Institution of Civil Engineers require for exemption from their Studentship Examination that candidates shall pass in all the subjects required for entrance to the Faculty of Engineering at one and the same time.

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Students who do not proceed to a University degree may take a course of not less than two years leading to a Certificate in Engineering. Those presenting themselves for entrance to courses, other than degree courses, are required to pass an Entrance Examination in the following subjects :

1. English Essay.
2. Mathematics.
3. Physics including Mechanics.

An optional paper will be set in Chemistry.

Candidates who present a certificate of having passed an examination which shall be deemed by the Faculty of Engineering as equivalent to the Entrance Examination, or who have been exempted from the First Examination for the Certificate in Engineering, or who have been elected to Entrance Scholarships in the University, will be exempted from the Entrance Examination.

These Regulations do not apply (*a*) to students entering for a single course under the Faculty, provided they satisfy the professor or lecturer in charge that they can satisfactorily follow the instruction given, (*b*) to students entering for workshop practice.

This training shall be regarded as either preliminary to or supplementary of a pupilage under some engineer or course of apprenticeship with some engineering firm. A number of engineers and firms are willing to take into consideration the time spent in the University in receiving students after graduation as pupils or apprentices.

Arrangements are made for students to spend the summer vacation in works, or to take a voyage as junior engineers in steamships ; students may thus obtain experi-

ence in a particular branch of engineering practice during their University course.

There is an annual Registration Fee of £1. A uniform Composition Fee of £35, or £37 1s., including registration fee and subscription to Guild of Undergraduates, has been arranged to include all lectures and classes in the complete yearly courses, and given in the separate time-tables.

There are valuable Scholarships and Fellowships.

Further information can be obtained from the Registrar.

UNIVERSITY OF LEEDS.—Courses of instruction are given in Civil and Mechanical Engineering, General Engineering, and Electrical Engineering.

It is worth while to call attention to the following emphasized remark in the prospectus :

“It is most important that all students, whether taking up Civil, Mechanical or Electrical Engineering, should have at least one year’s practical experience in Engineering Works before taking up the University course.”

All students, who must not be under sixteen years of age, are required to pass an Entrance Examination or to produce certificates of having passed the Matriculation of the Joint Board or an accepted equivalent. This Matriculation Examination is the ordinary examination conducted by the Joint Board for entrance into any of the Faculties, with certain exceptions, of the four Universities concerned. The engineering degree courses at Liverpool form one of the exceptions. At this University, as stated in the paragraph relating to it, candidates for degrees must first pass the Special Engineering Matriculation.

The syllabus of the ordinary Matriculation is to be obtained from the Secretary, Joint Matriculation Board, 24, Dover Street, Manchester. Students should, of course,

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base their choice of subjects on the course they ultimately intend to adopt. Students under seventeen have to take a paper on English Composition and Dictation. Three years are required for the B.Sc. degree course in Engineering Science.

The annual Composition Fee (inclusive of Registration and Library and Union Fees) is £31. The University has recently erected a large building for the teaching of Electrical Engineering. A very large addition has been made to the original equipment, in the form of most modern machinery, general plant, and apparatus of all descriptions. There is good opportunity for research work. For further information application should be made to the Registrar.

UNIVERSITY OF SHEFFIELD.—Lectures and laboratory courses of instruction are provided in the subjects of Applied Science required in the Engineering, Metallurgical, Mining, and Building Industries. Students who take the degree courses must be over sixteen years of age and have passed the Joint Board Matriculation or an equivalent.

The course for the degree of Bachelor of Engineering (B.Eng.) takes three years. The degree may be taken in any of the following branches :

- (a) Mechanical Engineering.
- (b) Electrical Engineering.
- (c) Civil Engineering.
- (d) Chemical Engineering.

All students for degrees take the same general course for the first two years, after which they specialize in their particular branch.

All applicants, with certain exemptions, for admission

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to the Applied Science Department, other than those working for degrees, are required to pass a Departmental Entrance Examination in any three of the following subjects :

Elementary Mathematics (Arithmetic and Algebra).

English Essay.

Elementary Science (including the elements of Heat and Mechanics).

Chemistry.

French *or* German.

Drawing (Freehand and Geometrical).

NOTE.—For Engineering students the first subject is compulsory.

Fees for the full Engineering Degree or Associateship Course are twenty-four guineas per annum.

The Dean of the Faculty of Applied Science is Professor Ripper.

Reference will be made later to the important departments of Metallurgy and Mining.

For further information applications should be made to the Registrar of the University.

AT THE ARMSTRONG COLLEGE, NEWCASTLE-UPON-TYNE.—The training afforded at this College is of an admirable type. The location of the Armstrong College, in the very centre of the varied engineering industries of the Tyne, gives students a unique advantage, and an earnest and determined man, after a training here, ought soon to be upon his feet. The College authorities are in close touch with the great firms of the North, and the curriculum is thus kept in harmony with practical needs.

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The fees are very moderate, and there are valuable Scholarships and Fellowships.

A student may either take a degree course or the course for the College Diploma.

The Degree Course.—Armstrong College is a constituent College of the University of Durham. Before entering upon a degree course the student must pass the University Matriculation or an equivalent. The course for the B.Sc. in Engineering covers three years, and the Composition Fees vary from £20 to £21 for the first year, from £25 to £28 2s. for the second year, and from £26 to £29 2s. for the third year, according to the special branch of engineering which the student takes up.

All students alike take the First Year Course in Mechanical Engineering, and then for the remaining two years to a large extent specialize in the department they choose—viz.: In Mechanical Engineering, Marine Engineering, Electrical Engineering, Civil Engineering, Naval Architecture, or Mining and Metallurgy.

The “Sandwich” system—i.e., the combination, as far as practicable, of scientific instruction in the College with practical experience in the workshop and drawing office—is in successful operation in Newcastle. The following course is suggested :

	Years.
College, one Session—September to July ...	... 3 $\frac{1}{4}$
Works—July to second following September ...	... 1 $\frac{1}{4}$
College, two Sessions—September to second following July ...	... 2
Works—July to second following January ...	... 1 $\frac{1}{2}$
Total ...	... 5 $\frac{1}{2}$

This course is merely given as an example, and may be modified according to arrangement with the employer.

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The following engineers and shipbuilders have promised to co-operate with the College by receiving pupils in the several departments of their works and in their drawing offices, and by permitting them to devote themselves exclusively during two or three sessions (as may be arranged) to their College studies. Parents and Guardians will make their own arrangements with firms.

1. George Clark, Ltd., Sunderland.
2. William Doxford and Sons, Ltd., Sunderland.
3. J. H. Holmes and Co., Newcastle-on-Tyne.
4. R. and W. Hawthorn, Leslie and Co., Ltd., Newcastle-on-Tyne.
5. North - Eastern Marine Engineering Co., Ltd., Wallsend-on-Tyne.
6. C. A. Parsons and Co., Newcastle-on-Tyne.
7. Palmer's Shipbuilding and Iron Co., Ltd., Jarrow-on-Tyne.
8. John Readhead and Sons, South Shields.
9. Swan, Hunter, and Wigham Richardson and Co., Walker-on-Tyne.
10. Wallsend Slipway and Engineering Co., Ltd., Wallsend-on-Tyne.
11. Clarke, Chapman and Co., Gateshead.

Courses for College Diploma.—Students who do not intend to proceed to a degree in Engineering Science are recommended to adopt one of the following courses of study:

- (a) Engineering (including Mechanical and Electrical Engineering).
- (b) Marine Engineering.
- (c) Civil Engineering.
- (d) Naval Architecture.
- (e) Mining.

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Special College diplomas in these subjects will be granted to students who follow the specified courses, and who attain a certain standard in the examinations. Although in special cases a two years' course may be taken, it is recommended that, wherever circumstances will admit of it, the three years' course be taken. The Composition Fees for three years' course are £21 the first year, from £26 to £28 2s. the second year, and from £26 to £28 2s. the third year.

For all particulars apply to the Secretary.

AT GLASGOW—THE UNIVERSITY OF GLASGOW.—The School of Engineering at the University is old-established and has a great reputation. It is in the heart of large engineering interests, and the professors are in touch with practical needs. Classes are held during the winter session that is, from October to March. They comprise Lectures on Engineering Principles and Practice, Instruction in Geometrical Drawing, and in Engineering Drawing and Design, Laboratory Practice, and visits to Engineering Works and Manufactories. The courses are designed to suit students who intend to devote themselves to Civil, Mechanical, Electrical, or Mining Engineering. The James Watt Engineering Laboratories, which cost £40,000, are now complete.

The fees are reasonable, but vary according to the classes attended, and information should be sought in the University Calendar, published by James MacLehose and Sons, 61, St. Vincent Street, Glasgow. Price 3s., by post 3s. 4d.

THE ROYAL TECHNICAL COLLEGE.—This finely - equipped institution, formerly known as the Glasgow and West of Scotland Technical College, has

since 1913 been affiliated to Glasgow University. Candidates for the degree of B.Sc. in Applied Science of this University may take the necessary qualifying courses either at the College or the University, or both. Courses may be taken in Civil Engineering, Mechanical Engineering, Electrical Engineering, Mining, and Naval Architecture.

Diploma in Engineering Science.—A three years' course in any of the above-mentioned subjects, together with the passing of the necessary examinations, qualifies for the College Diploma in Engineering Science. Attendance on the fourth year of any of these courses qualifies for the Associateship of the College in the corresponding department.

A large number of leading firms in all branches of Engineering have expressed their willingness to allow a selected number of their apprentices facilities for carrying out a scheme of College study conjoined with practical work. Students who desire to serve their apprenticeship with any of these firms, amongst which may be mentioned William Beardmore and Co., John Brown and Co., Ltd., William Denny and Bros., and Yarrow and Co., Ltd., must communicate direct with them and make their own arrangements regarding apprenticeship. For a complete list of such firms and other details relating to training at the College, application should be made to the Director, Royal Technical College, Glasgow.

AT EDINBURGH—THE UNIVERSITY OF EDINBURGH.—Here a course of training is afforded similar to that at Glasgow University. Although Edinburgh is not as advantageously circumstanced as Glasgow in being in the midst of large industrial interests,

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its attractions are many from the point of view of equipment and the status of the Professors. Consult the University Calendar, which is published by James Thin, 55, South Bridge, Edinburgh, post free 3s. 4d.

THE HERIOT-WATT COLLEGE.—In conjunction with the University of Edinburgh, a new scheme has been arranged for degrees in Civil, Mechanical, and Electrical Engineering. By this scheme the staff and equipment of both institutions are fully utilized, thus enabling students attending the University to specialize for degrees in the three departments of Civil, Mechanical, and Electrical Engineering. Complete courses of instruction are also provided in Technical Chemistry and Mining, the College being recognized by the University of London for the purposes of the B.Sc. degree in Mining (External students). Special post-graduate instruction is offered to students who have taken their degree in Applied Science.

There is a complete equipment of laboratories and workshops, the most recent addition being a fine range of up-to-date Chemical Laboratories. The Composition Fees are twelve and fifteen guineas a session. For further information apply to the Secretary.

AT THE UNIVERSITY OF BIRMINGHAM.—The equipment is of the best type, and the Professoriate includes men of conspicuous eminence. The full Engineering courses extend over four years and lead to the degree of B.Sc. in Engineering. To matriculate, every candidate must pass in five subjects at one examination—viz. :

(1) English History and Literature, (2) Mathematics, and (3) three subjects (of which one must be a language) chosen from the following list: Latin, Greek, French, German, Italian, Spanish, Higher Mathematics, Experi-

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mental Mechanics, Chemistry, Geography, Botany, Animal Biology, Geometrical Drawing.

Candidates for degrees in Engineering must pass in Experimental Mechanics, and are further recommended to take Higher Mathematics. If these two subjects are passed, a Special Engineering Matriculation Certificate is awarded, which is accepted by the Institution of Civil Engineers as exempting from their Students' Preliminary Examination.

The Matriculation Examination is held twice a year, in July and September; the fee is £2.

Students who are unable to take a full course, or who have not been matriculated, will be admitted to the classes as far as room permits, and on leaving the University will receive a certificate stating the courses they have taken and their positions in the examinations; but before entering such students are required to pass an Entrance Examination in Mathematics, and in either Experimental Mechanics or Chemistry up to the matriculation standard.

Students, without taking a systematic course, may be admitted to any special course, provided that they can satisfy the Professor concerned that their previous knowledge is such as to enable them to follow with advantage the instruction given.

The degree courses for the first year are the same for all branches of Engineering, but after the first year students must take up definitely one of the branches, Mechanical, Civil, or Electrical Engineering.

The Membership Fee of the University is £1 11s. 6d. per session. The Composition Fees (including Membership Fee) for the B.Sc. course in Engineering are, first year, £34 10s. 6d.; second year, £50 10s. 6d.; third year, £50 10s. 6d.; fourth year (Mechanical, Civil, and Electrical), £50 10s. 6d.

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For all further information, apply to the Registrar, the University, Edgbaston.

AT THE UNIVERSITY OF BRISTOL. — The Faculty of Engineering is provided and maintained in the Merchant Venturers' Technical College. Students must not be under sixteen years of age, and, if they are entering upon a course of study for a degree, must pass the University Matriculation Examination or an equivalent.

The lecture-rooms, laboratories, workshops, and general equipment of the College are fully described in a pamphlet obtainable (free) on application to the Registrar of the College.

The degree course extends over a period of not less than three years. For the final part of the course the student may take Civil, Mechanical, Electrical, or Automobile Engineering. The Registration Fee is £1 1s., and the Tuition Fees are £26 5s. per annum. Further reference to courses at Bristol University will be found in the section devoted to Motor Engineering.

AT FARADAY HOUSE, Southampton Row, London, W.C., special attention is given to Electrical Engineering. The institution has two departments, the Training Department and the Standardizing and Testing Department. The Training Department provides students with a thorough training—theoretical and practical—in Electrical and Mechanical Engineering. The full diploma course occupies four years, and is divided between theoretical instruction at Faraday House and practical experience with firms which are associated with the institution. There is an Entrance Examination.

The First Year is spent at Faraday House, for instruc-

tion in theory, and in the use of electrical instruments and apparatus, tools and general workshop practice.

The Second Year is spent at the works of Affiliated Firms engaged in the manufacture of steam-engines and boilers, the students passing through the different departments, assisting in constructing, erecting and testing the machinery manufactured.

For the Third Year students return to the College for advanced instruction, lectures by specialists being a feature of this year.

In the Fourth Year they pass either to an electrical factory for manufacturing experience, or to a power-house for the practical study of electricity generation and distribution.

Pupils thus obtain a thoroughly practical experience in the best manner possible. Amongst the important advantages of this method of training are the favourable ways in which students are introduced to their future profession, and the opportunities afforded them of obtaining an appointment at the completion of their time.

It may be added that, owing to its close connection with the electrical industry, Faraday House is able to offer appointments to all students whom it can conscientiously recommend, and to assist them to better positions as time goes on.

The total payments for the four years' course amount to 300 guineas. There are entrance scholarships and exhibitions. For further particulars apply to the Secretary.

AT THE CRYSTAL PALACE SCHOOL OF PRACTICAL ENGINEERING a very successful effort is made to teach theory and practice simultancously. A large number of engineers holding responsible posts have

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been trained here. The School is approved by the Institution of Civil Engineers. Complete courses are provided in Mechanical, Civil and Electrical Engineering. The fees for a year's course are, in one payment, £54 for Mechanical and £64 10s. for Civil Engineering; for the two years' course £108; for Electrical Engineering the fees are £21 10s. per term. Full particulars may be obtained from the Principal, Mr. J. W. Wilson.

Other institutions at which a good training is offered are—the University Colleges of the University of Wales at Aberystwyth, Bangor, and Cardiff; the University College, Nottingham; the various Polytechnics.

Mining and Metallurgy receive special and effective attention at the Royal School of Mines (Imperial College), South Kensington, Birmingham University, Sheffield University, the Armstrong College, Newcastle, and at the School of Metalliferous Mining (Cornwall), with its branches at Camborne, Redruth, and Penzance. Parents can obtain full particulars by writing to the Secretary in each case. (See also p. 302, *et seq.*).

THE “SANDWICH” SYSTEM.—This is an attempt to meet the difficulties of the pupil system on the one hand and the Technical College system on the other. Briefly it is this: A pupil, on payment of a premium, enters upon a five-and-a-half or six years' apprenticeship with a firm, and is allowed to “sandwich” a year or two in “works” with a year or two at College, dividing the time between “works” and College as may be deemed most advantageous. The system is in operation at some of the Scotch Colleges and, as we have explained above, at the Armstrong College of Science, Newcastle-on-Tyne, and

full particulars may be obtained by consulting the College Calendars.

A grave objection to the “Sandwich” system lies in its expense, involving the premium to the firm, the cost of the College course, and the cost of maintenance for six years. The probable solution, however, of the difficulty of correlating practical experience in the workshop with training in scientific theory may be ultimately found in some modification or development of this last system. The pupil system is so firmly fixed in the traditions of British engineering that it is probably on this foundation that future developments will be based. The way at present is blocked by the custom of the payment of a premium. Such a custom is unknown in America, and it ought to be unknown in the United Kingdom. A few hundreds so obtained are obtained at heavy cost, when brains are excluded thereby from our works, and real ability lost to the nation.

It would be well if the custom were abolished, for it places an embargo upon the skill which employers should endeavour to attract for the maintenance of our commercial position. Some firms of the highest standing—*c.g.*, Messrs. Yarrow and Co., Scotstoun, Glasgow, formerly at Poplar—have already made a beginning, and accept no premium; their example, it is hoped, will soon have a widespread effect. Still, while the premium system prevails, parents will do wisely to select firms where their sons will receive real attention, and where scientific instruction goes, to some extent, hand in hand with the practical training. If premiums were abolished, then firms might adopt some system similar to the excellent system that has obtained for half a century in H.M. Dockyards for the training of apprentices, and has produced

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men of the eminence of the late Sir William White, Director of Naval Construction. The Admiralty system may be briefly summarized as follows :

ADMIRALTY SYSTEM.—Apprentices who enter the dockyards do so on the result of open competitive examinations held once a year in April by the Civil Service Commissioners. Age, fourteen to sixteen. The subjects of examination are — (1) Arithmetic ; (2) Geometry, Books I., II., III., and Algebra (up to easy Quadratic Equations) ; (3) English, including Handwriting, Spelling, and Composition ; (4) History and Geography ; (5) Elementary Science ; and (6) Drawing. Candidates must also pass a medical examination. If a lad succeeds, he enters on his apprenticeship, and attends school two or three afternoons and evenings per week, and receives regular instruction in a prescribed course. When not at school he is employed at work in the yard or shops, and his time is divided between the different departments, so that he may become conversant with all branches of his work.

From apprentices in their first year the best are selected, and continue their studies in the same way for a second year, while the rest now aim at being just skilled mechanics ; the same process of selection is made for a third year's study, and then, finally, the best apprentices who head the list for the third year are retained for the fourth year's course, including the study of professional subjects in the drawing office. At the termination of this course, a final examination is held between such apprentices in all the dockyards, and, upon the results, the Lords of the Admiralty choose a certain number to continue their study—first at one of the large Home Dockyards for one year, and afterwards at the Royal Naval College,

Greenwich. Those who proceed to Greenwich eventually receive appointment in the Royal Corps of Naval Constructors or the Engineering Staff of the Navy.

Systems on somewhat similar lines, and conceived in a large and generous spirit, have been introduced by Messrs. Yarrow and Co., Scotstoun, Glasgow; Messrs. Denny Bros., Dumbarton; Messrs. David Rowan and Co., Glasgow; and others. The Great Eastern and South-Western Railway Companies have systems in vogue whereby their apprentices are able to avail themselves of day courses of study in the London Technical Institutes. Messrs. Vickers, Limited, have a good system of operation for the drawing office apprentices in their Naval Construction Works, Barrow-in-Furness. Apprentices, who must be between fifteen and eighteen years of age, are admitted as a rule after an examination in English (consisting of a short essay on a given subject), Arithmetic, Algebra, and Plain and Solid Geometry (Elementary Stage). Apprenticeships are for five years, and the salary is at the rate of four, five, six, seven, and eight shillings per week. Apprentices who have distinguished themselves by attention to work, capability, and time-keeping, will be paid for the third year six shillings and sixpence, for the fourth year eight shillings, and for the fifth year ten shillings a week. Apprentices are expected to attend Science Classes in Naval Architecture, Advanced Mathematics, Theoretical Mechanics, Applied Mechanics, and Steam, and success in the examination in these subjects will result in an addition to pay.

Perhaps the best conceived scheme that has been proposed is that which is recommended by the North-East Coast Institution of Engineers and Shipbuilders. It seems to meet all existing difficulties: the door is not

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closed to the youth who cannot afford to pay a premium as a pupil, and at the same time the working apprentice has a chance to rise; work in the shop is closely linked with adequate instruction in scientific theory, and the trained pupil receives a decent wage.

If this scheme were generally adopted, it would result in an immense advantage to British Engineering. For the information of parents, we insert an outline of the scheme.

NORTH-EAST COAST SCHEME.—Youths are divided into two classes, one being ordinary apprentices, whose object is to qualify as tradesmen, mechanics, or artisans; and the other, “pupils,” who enter works with the view of ultimately rising into the higher branches of the profession of engineering or shipbuilding, and will attend a systematic course of instruction at University College day classes.

Incentives for Apprentices.—The scheme for apprentices provides that preference shall be given to youths bringing the best certificates of conduct and character, and that the age of starting shall be from fifteen to sixteen years. Each apprentice shall be awarded marks for approved examinations passed, for time-keeping, and for good conduct, perseverance, and progress. An apprentice obtaining sixty marks will get sixpence per week more in the ensuing year, and more in proportion to the increase in marks. Promotion in the workshops will depend upon marks obtained, and should an apprentice during his first three years have shown marked ability at evening classes and obtained maximum marks for time-keeping, perseverance, and progress in the workshops, he may be allowed to spend his fourth or fifth year at College day classes, the fees of which will be paid by his employer.

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At least one vacancy per annum in the drawing office will be filled by the apprentice obtaining the highest marks.

The Terms for Pupils.—The regulations for pupils are under three heads—viz.:

(a) Youths who enter the works after a three or four years' engineering day course at a University College, and have obtained an approved certificate or a pass degree in Engineering Science or Naval Architecture. These will serve three years' pupilage, and for the first year be paid as ordinary apprentices in the third year, and for the other two years have three shillings and five shillings per week added to ordinary apprentices' pay.

(b) Youths desiring to combine workshop experience and College study must produce evidence of preparatory education, and will then be admitted to a six years' pupilage, during which time they will attend a University College for three academical years. Their pay will be that of ordinary apprentices, plus four shillings per week in the year after their first year's College training.

(c) Youths who, having entered the works as apprentices, succeed during their apprenticeship in passing the Matriculation or equivalent examination, will for the remainder of their time be treated as under the second scheme.

Further information may be obtained from the Secretary, North-East Coast Institution of Engineers and Shipbuilders, Bolbec Hall, Westgate Road, Newcastle-upon-Tyne.

WHITWORTH SCHOLARSHIPS. — These valuable scholarships and exhibitions were founded by the late Sir Joseph Whitworth for the further instruction of apprentices in Mechanical Engineering. They are open

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to competition to any of H.M. subjects who are under twenty-six years of age on May 1. Four scholarships of the value of £125 a year and tenable for three years are offered annually, and about thirty exhibitions of the value of £50 for one year. Candidates must have been engaged in handicraft in the workshop of a Mechanical Engineer for at least three years, and have been at work at the vice and lathe, or the forge, or the bench, for at least six consecutive months in each of those years, and they must have spent at least twelve months altogether at the vice and lathe. Full particulars can be obtained by applying to the Secretary, Board of Education, Whitehall, S.W.

OTHER SCHOLARSHIPS.—Royal Exhibition (1851) Scholarships (value £150 per annum and tenable for two or three years) and Probationary Bursaries (value £70 for one year) are offered at certain Colleges. Consult the College Calendars.

The Surveyors' Institution offer scholarships of the value of £80 at Cambridge and of £50 at Bangor and Newcastle to facilitate the education of Surveyors in branches of scientific knowledge cognate to their profession. Apply to the Secretary, 12, Great George Street, S.W.

The Martell Scholarship in Naval Architecture of the annual value of £100 and tenable for three years is offered for competition by the Council of the Institution of Naval Architects. Candidates must not be less than eighteen nor more than twenty-one years of age on March 1 of the year in which they compete, and must at that date have been continuously employed for two years upon Naval Architecture or Marine Engineering. Applications have to be sent in by February 1. Further particulars and

forms of entry may be obtained from the Secretary of the Institution of Naval Architects, 5, Adelphi Terrace, London, W.C.

Similar scholarships are offered by the Institution of Electrical Engineers, Victoria Embankment, London, W.C.; and by the Committee of Lloyd's Register, 71, Fenchurch Street, London, E.C.

CIVIL ENGINEERING

We have already pointed out the wide range and importance of engineering that comes under the designation “Civil.” For this branch of the profession a sound preliminary education and a sound training in scientific theory are imperative. The possession of a University degree is desirable. The young engineer will seek a post under a firm of repute engaged upon constructive work, and he will seek to obtain an opening as assistant to the Resident Engineer. He will be content with a salary of £150 to £200, and when he has gained his practical experience and obtains a post as Resident Engineer, he will receive a substantial salary—from £600 to £1,000 or more.

Railway work attracts a large number of men, and the great railway companies have many apprentices and premium pupils at their different locomotive works. Apprentices commence at sixteen or sixteen-and-a-half years of age and serve five years, going through the fitting-shop and erecting-shops only. They are usually paid a small wage of about seven shillings a week for the first year, rising to thirteen or fifteen shillings in the fourth year. They are not admitted into the drawing office. Pupils pay a premium of £100 to £150 a year for three

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years. They go through all the departments of the works, including the drawing-office.

There lie before the able and efficient man the prospects of employment on one or other of the home railways and also the wider prospects of employment abroad. In 1913 several Assistant Locomotive Superintendents were required for the Indian States Railways. Candidates had to be about twenty-four years of age and to have served either apprenticeship or pupilage in the locomotive department of one of the principal railway companies of Great Britain, or in the shops of a firm of locomotive builders. The engagement was to be for three years in the first instance, and the initial salary from £20 to £26 per month according to qualifications. First-class passage was paid to India. Application for similar openings in the future should be addressed to the Director-General of Stores, India Office, S.W.

INDIAN PUBLIC WORKS DEPARTMENT

The Royal Engineering College, Cooper's Hill, is now closed, and the opportunity of offering for this important department of public service is within the reach of every well-trained engineer. The subject is of such wide importance that it will be well to deal with it fully. Vacancies are announced from time to time in the public Press. The Regulations as to the appointment of Assistant Engineers in 1913—and they will be similar in future years—were as follows:

1. The Secretary of State for India in Council will, in the summer of 1913, make not less than twenty-three appointments of Assistant Engineers in the Public Works Department of the Government of India.

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In making these appointments he will act with the advice of a Selection Committee, including at least one eminent representative of the Engineering profession.

2. Applications for the appointments must be made on a printed form to be obtained from the Secretary, Public Works Department, India Office, Whitehall, London, S.W., and to be returned so as to reach him not earlier than March 1, 1913, or later than May 1, 1913.

No applications received after the latter date will be considered.

3. Candidates must have attained the age of twenty-one, and not attained the age of twenty-four years on July 1, 1913.

4. Every candidate, except as provided in Regulation 5, must be a British subject of European descent, and at the time of his birth his father must have been a British subject, either natural-born or naturalized in the United Kingdom. The decision of the Secretary of State in Council as to whether a candidate satisfies this condition shall be final. He must also be of good moral character and sound physique.

5. Natives of India who are British subjects, and are not qualified under Regulation 4, are eligible for appointment, and shall be selected to the extent of 10 per cent. of the total number of Assistant Engineers thus recruited, if otherwise duly qualified.

6. Candidates must produce evidence that they have (1) obtained one of the University degrees mentioned in Appendix I., or (2) passed the A.M.I.C.E. examination, or (3) obtained such diploma or other distinction in Engineering as may, in the opinion of the Selection Committee, be accepted as approximately equivalent to the degrees mentioned. It will, therefore, be for the Selection Committee to decide, in dealing with the applications, whether they will recommend any candidate under head (3).

7. It is advisable that candidates who have been through a college course, and obtained one of the degrees mentioned in Appendix I., should have had at least one full year's practical experience of Civil Engineering under a qualified Civil Engineer at the time when they appear before the Selection Committee. Those who have taken no College course should have had a full three years of such practical experience. In the event of any candidate being selected who has not, in the opinion of the Selection Committee, had sufficient practical experience, he may be required to undergo, after arrival in India, a year's probation in charge of works, and his final appointment may be made dependent upon the result of such probation.

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8. Candidates must be prepared, if called upon, to attend at the India Office, at their own expense, for a personal interview with the Selection Committee.

9. They will further be required, before final appointment by the Secretary of State in Council, to appear before the Medical Board at the India Office for examination as to their physical fitness for service in India.

A copy of the Regulations as to the Physical Examination of candidates for Indian appointments will be forwarded on application to the Under Secretary of State.

10. Selected candidates will also be required to satisfy the Secretary of State, in such manner as he may determine, of their ability to ride.

11. They will on appointment be provided with free first-class passages to India, and they will be expected to proceed thither about the end of September, 1913.

Their pay will begin from the date of their landing in India, and, if they so desire, they will be able to obtain in India an advance of two months' pay, recoverable by monthly instalments of one-third of salary.

12. They will enter the Service as Assistant Engineers, third grade, on a salary of 4,560 rupees a year (equivalent to £304 a year when the rupee is at 1s. 4d.).

13. The instruments required by Assistant Engineers are supplied to them in India.

14. Particulars as to their prospects of pay, pension, etc., are contained in Appendix II.

NOTE FOR THE INFORMATION AND GUIDANCE OF CANDIDATES.

The Selection Committee of 1906 drew attention to the subjects which were held to be of most importance for the Public Works Service—viz. :

Pure Mathematics, including a knowledge of the differential and integral calculus.

Applied Mathematics.

Geometrical and Engineering Drawing.

Surveying and Geodesy.

Strength of Materials and Theory of Structures.

Hydraulics.

Heat Engines.

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Materials used in Construction.

Building Construction.—Wood and metal work, limes and cements, and building with stone, brick, and concrete.

Knowledge of the Principles of road-making, waterworks, sanitary and railway engineering. (Important.)

The Selection Committee were further of opinion that all candidates should have had some workshop training.

The following announcement regarding the recruitment of the Public Works Department in future years is published for the information of intending candidates :

The foregoing Regulations apply only to the appointment of Assistant Engineers in the permanent establishment of the Public Works Department in 1913, but it is the intention of the Secretary of State for India in Council, as at present advised, to recruit the permanent establishment of the department in succeeding years on the same general lines as those already laid down.

He is, however, unable to give any undertaking that the Regulations will remain unaltered in the future.

APPENDICES

APPENDIX 1.

LIST OF DEGREES REFERRED TO IN PARAGRAPH 6.

University of Oxford.—B.A. (in the Final Honours School of Engineering Science).

University of London.—B.Sc. (Engineering).

University of Cambridge.—B.A. Honours (Mechanical Sciences Tripos).

University of St. Andrews.—B.Sc. (Engineering).

University of Glasgow.—B.Sc. (Engineering).

University of Edinburgh.—B.Sc. (Engineering).

Victoria University of Manchester or Victoria University.—B.Sc. (with Honours in Engineering), and B.Sc.Tech. in “Mechanical” or “Electrical Engineering” (Honours Division in the Final Examination).

University of Liverpool.—B.Eng., provided the degree be obtained by passing the examinations of the University.

University of Leeds.—B.Sc. (in Civil or Mechanical Engineering).

University of Sheffield.—B.Eng. (First Class in the Final Examination).

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University of Birmingham.—B.Sc. (Engineering), provided that the Engineering Matriculation Examination shall have been passed before entry upon any course of study which forms part of the degree course, and that a regular course of study, occupying not less than three academical years, shall have been pursued between the passing of such Matriculation Examination and the passing of the Final Examination for the degree.

University of Dublin.—B.A.I.

National University of Ireland.—B.E. and M.E.

University of Wales.—B.Sc. (in the department of Civil, Mechanical, or Electrical Engineering).

University of Durham.—B.Sc. (in Civil, Mechanical, or Electrical Engineering, or in Naval Architecture), provided that the Matriculation Examination for Engineering and Naval Architecture shall have been passed before entry upon any course of study which forms part of the degree course.

University of Bristol.—B.Sc. (in Civil or Mechanical Engineering).

Any other degree of a University in the United Kingdom which may hereafter be recognized by the Council of the Institution of Civil Engineers as exempting from passing the examination for Associate membership.

APPENDIX II.

PARTICULARS REGARDING THE INDIAN PUBLIC WORKS DEPARTMENT (EXECUTIVE BRANCH).

(The arrangements and salaries hereinafter described are subject to revision according to the requirements of the Service.)

1. The engineer establishment of the Indian Public Works Department consists of a staff of engineers, military and civil, engaged on the construction and maintenance of the various public works undertaken by the State in India.

2. The permanent establishment of the department is recruited from the following sources :

- (1) Officers of Royal Engineers.
- (2) Persons appointed to the Imperial Service by the Secretary of State by selection from the United Kingdom.
- (3) Persons educated at the Government Civil Engineering Colleges in India, and appointed to the Provincial Services by the Government of India.
- (4) Occasional admission of other qualified persons.

ENGINEERING [INDIAN PUBLIC WORKS

3. The various ranks of the department are as follows :

		Salary per Annum (Imperial Service). Rs.
Chief Engineers, First Class	... ..	33,000 ; i.e., £2,200
„ „ Second Class	... ..	30,000
Superintending Engineers, First Class	... ..	24,000
„ „ Second Class	... ..	21,000
„ „ Third Class	... ..	18,000
Executive Engineer, twentieth year of service and following years	... ..	15,000
Executive Engineer, nineteenth year of service		14,400
„ „ eighteenth year of service		13,800
„ „ seventeenth year of service		13,200
„ „ sixteenth year of service		12,600
„ „ fifteenth year of service		12,000
„ „ fourteenth year of service		11,400
„ „ thirteenth year of service		10,800
„ „ twelfth year of service	...	10,200
„ „ eleventh year of service		9,600
Assistant Engineer, tenth year of service	...	9,000
„ „ ninth year of service	...	8,400
„ „ eighth year of service	...	7,920
„ „ seventh year of service	...	7,440
„ „ sixth year of service	...	6,960
„ „ fifth year of service	...	6,480
„ „ fourth year of service	...	6,000
„ „ third year of service	...	5,520
„ „ second year of service	...	5,040
„ „ first year of service	...	4,560 ; i.e., £304

4. The increments will be given for approved service only, and in accordance with the rules of the department.

Exchange compensation allowance will not be granted to future entrants.

5. Promotions above the grade of Executive Engineer are dependent on the occurrence of vacancies in the sanctioned establishment, and are made wholly by selection ; mere seniority is considered to confer no claim to promotion.

PENSIONS AND PROVIDENT FUND.

6. The following is a summary of the principal pension rules applicable to engineers appointed to the Imperial Service by the Secretary of State from the United Kingdom.

CAREERS FOR OUR SONS

7. An officer is eligible for a pension on voluntary retirement after completing twenty years' qualifying service or attaining the age of fifty-five years. If at an earlier date he is compelled to retire from the Service through ill-health not occasioned by irregular or intemperate habits, he becomes eligible for an invalid pension or a gratuity, according to the length of his service.

The amount of pension or gratuity is regulated as follows :

After a service of less than ten years, an invalid gratuity not exceeding one month's emoluments for each completed year of service.

After a service of not less than ten years, an invalid pension not exceeding the following amounts :

SCALE OF PENSION.

Years of Completed Service.	Sixtieths of Average Emoluments.	Maximum Limit of Pension.
10	20	1,000 rupees a year, or $83\frac{1}{3}$ rupees a month.
11	21	1,400 rupees a year, or $116\frac{2}{3}$ rupees a month.
12	22	1,800 rupees a year, or 150 rupees a month.
13	23	2,200 rupees a year, or $183\frac{1}{3}$ rupees a month.
14	24	2,600 rupees a year, or 216 $\frac{2}{3}$ rupees a month.
15	25	3,000 rupees a year, or 250 rupees a month.
16	26	
17	27	
18	28	
19	29	

After a service of not less than twenty years, a retiring pension not exceeding the following amounts :

SCALE OF PENSION.

Years of Completed Service.	Sixtieths of Average Emoluments.	Maximum Limit of Pension.
20 to 24 ...	30	4,000 rupees a year, or $333\frac{1}{3}$ rupees a month.
25 and above	30	5,000 rupees a year, or $416\frac{2}{3}$ rupees a month.

ENGINEERING [INDIAN PUBLIC WORKS

Officers who have shown special energy and efficiency during an effective service of three years in certain appointments may, at the discretion of the Government of India, be allowed an additional pension of 1,000 rupees a year, subject to the condition that the officer must not retire voluntarily before the completion of a total qualifying service of twenty-eight years.

Subject to certain prescribed conditions, rupee pensions are now issued at the rate of exchange of 1s. 9d. the rupee to pensioners residing in countries in which the Indian Government rupee is not legal tender.

8. A provident fund has been established for all Civil Engineers of the department on the following basis :

- (1) The contribution is compulsory up to $6\frac{1}{4}$ per cent. on salaries, with voluntary contributions of not more than a further $6\frac{1}{4}$ per cent. Subscriptions on leave of any kind will be optional.
- (2) Compound interest on such payment is annually credited by Government to each officer subscribing, the rate being at present 4 per cent. per annum.
- (3) The sum which thus accumulates to the credit of an officer is his absolute property, subject to the rules of the fund, and is handed over to him unconditionally on quitting the Service ; or, in the event of his death before retirement, to his legal representatives.

LEAVE.

9. The following is a summary of the principal regulations relating to the leave admissible to engineers appointed to the Imperial Service by the Secretary of State from the United Kingdom.

(a) *Short Leave.*

10. Privilege leave is a holiday which may be granted to the extent of one-eleventh part of the time that an officer has been on duty without interruption ; and it may be accumulated up to three months, earned by thirty-three months' service. During privilege leave the officer retains a lien on his appointment, and receives an allowance equal to the salary which he would receive if he were on duty in the appointment on which he has a lien. An interval of six months must elapse between two periods of absence on privilege leave.

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Privilege leave may be prefixed to furlough, special leave, or extraordinary leave without allowances. The whole period of leave thus taken in combination is known as combined leave. Combined leave cannot be granted for a shorter period than six months, nor, except on medical certificate, may be extended beyond two years.

11. Extraordinary leave without allowances may be granted in case of necessity, and, except in certain specified cases, only when no other kind of leave is by rule admissible. It may be granted in continuation of other leave.

12. Subsidiary leave, usually with half average salary, is granted to an officer proceeding on or returning from leave out of India, or on retirement, to enable him to reach the port of embarkation or to rejoin his appointment. It is admissible only at the end, and not at the beginning, of combined leave.

13. Short leave is also granted to enable officers to appear at examinations, etc.

(b) Long Leave.

14. Furlough and special leave with allowances are admissible to an aggregate maximum amount of six years during an officer's service. The amount of furlough "earned" is one-fourth of an officer's active service, and the amount "due" is that amount less any enjoyed.

Furlough without medical certificate can, if due, be generally taken after eight years' active service, and again after intervals of not less than three years' continuous service. It is limited to two years at a time.

Furlough on medical certificate may be granted (a) to an officer who has rendered three years' continuous service, for not more than two years, but capable of extension up to three years, and (b) to an officer who has not rendered three years' continuous service, up to one year in any case, and up to such longer period, if any (but not exceeding two years), as the officer may have furlough "due" to him.

15. The allowances admissible during furlough are—

- (1) During the first two years of furlough without medical certificate and during so much of furlough with medical certificate as may be "due"—half average salary subject to certain maximum and minimum limits.
- (2) After the expiration of the period for which the foregoing allowances are admissible—one quarter of average salary, subject to certain maximum and minimum limits.

ENGINEERING [MUNICIPAL WORK

16. Special leave may be granted at any time for not more than six months, with intervals of six years' service; allowances, calculated as during furlough, are given during the first six months only, whether taken in one or more instalments.

GENERAL RULES.

17. Leave of absence can never be claimed as of right, and is given or refused at the discretion of Government.

18. After five years' continuous absence from India, an officer is considered to be out of the employment of Government.

19. When leave allowances other than privilege leave pay are paid at the Home Treasury, or in a Colony where the standard of currency is gold, rupees are converted into sterling at the rate of exchange fixed for the time being for the adjustment of financial transactions between the Imperial and Indian Treasuries, unless any other rate has been exceptionally authorized. But for the present the rate of conversion is subject to a minimum of 1s. 6d. to the rupee.

MUNICIPAL WORK

In addition to posts as Managers of Gas Works, who are generally men of good scientific training, and Managers of Electric Stations, with whom we deal later, a few words are necessary as to the posts offered in Municipal Engineering as Borough Surveyors. A youth who is aiming at this career should remain at school until he is seventeen or eighteen, and pass some such qualifying examination as the Senior Oxford or Cambridge Local, or the London Matriculation. He can then either be articled forthwith for three or four years to a Borough Surveyor, at a premium ranging from £100 to £500, or, if he elects to go to an Engineering College, he will be excused perhaps two years of his articles, and be accepted at a reduced premium. As soon as possible—he cannot do so until he is twenty-two—he should endeavour to pass the examination of the Incorporated Association of Municipal and County Engineers. The subjects of the examination are—

CAREERS FOR OUR SONS

I. ENGINEERING AS APPLIED TO MUNICIPAL WORK (1st Paper) :

- A. Sewage Disposal.
- B. Tramways Construction.
- C. Bridge Construction.
- D. Water Supply.

II. ENGINEERING AS APPLIED TO MUNICIPAL WORK (2nd Paper) :

- A. Geodesy.
- B. Hydraulics.
- C. Sewerage.
- D. Road Construction and Maintenance.

III. BUILDING CONSTRUCTION : STRENGTH OF MATERIALS .

- A. Materials
- B. The Construction of Public and Private Buildings.
- C. Building By-laws.
- D. Public Baths and Hospitals.

IV. SANITARY SCIENCE AS APPLIED TO TOWNS AND BUILDINGS :

- A. Heating and Ventilation.
- B. Scavenging and Disposal of Refuse.
- C. Water Supply and Drainage of Buildings.
- D. Disinfection.
- E. The Improvement of Insanitary Areas.

V. MUNICIPAL AND LOCAL GOVERNMENT LAW AS RELATING TO THE WORK OF MUNICIPAL ENGINEERS AND SURVEYORS.

Candidates may also be examined in the *optional* subject of Town Planning. Full details of the examination

may be obtained from the Secretary, Institution of Municipal and County Engineers, 92, Victoria Street, S.W.

After remaining for some years with a Borough Surveyor, a young man, when between twenty-seven and thirty-five years of age, should seek a post as Assistant, which will be a stepping-stone to a post as Municipal Surveyor. Such vacancies are advertised from time to time in papers like the *Surveyor*. As an Assistant he must keep his object steadily in view, and make himself indispensable to his chief. The Provinces offer the best training-ground; and small towns are best, as the experience to be gained is more varied, because the work is not departmentalized to the same extent as it is in London and other very large towns. When he has secured an appointment as a Borough Surveyor, his position will improve according to his worth.

Most Municipal Engineers of eminence seek the Associateship, and finally, the Membership, of the Institution of Civil Engineers, and some are also Fellows of the Royal Institute of British Architects, and the varied character of Municipal work renders such qualifications very desirable. A Municipal Engineer has manifold responsibilities: he must keep all roads, bridges, and sewers in good repair; he must advise his Council about all new buildings, and about contraventions of their by-laws, involving at times legal action. He may have to construct a refuse-destroyer, or a concert-hall, or a light railway, plan a rifle-range, or lay out a bowling-green. He must possess tact and courtesy and knowledge of men, for one of his duties will be to attend all Council and Committee meetings.

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MINING AND METALLURGY.

This is an important department about which we find that information is widely desired.

OIL MINING has recently become a matter of great importance, and it is certain that its importance will further develop. It may be convenient to deal first with the special department of Oil Mining before we proceed to the more general consideration of Mining and Metallurgy. The Imperial College of Science, South Kensington, has instituted an experimental course of training in the technology of oil at the Royal School of Mines. But for the past five years attention has been given at the University of Birmingham to the training of Petroleum Mining Engineers, and in 1911 a special course leading to a degree in Petroleum Mining was instituted. There is at Birmingham a complete equipment for teaching oil mining, including a full-sized boring plant for demonstration and research purposes. It is to Birmingham that Petroleum Companies working in British areas have, to a large extent, been applying for their engineers, and, at the present time, students from Birmingham are working on oil-fields in Burmah, Assam, Egypt, Peru, Trinidad, and Canada.

The demand for first-class men is greater than the supply. A syllabus covering the course for the degree of B.Sc. (in Petroleum Mining) and a Diploma in Petroleum Mining has been prepared in consultation with Sir Boverton Redwood, Petroleum Adviser to the Admiralty, Home Office, and India Office, and Consulting Adviser to the Colonial Office.

The Professor of Mining is Professor John Cadman, Petroleum Adviser to the Colonial Office.

The course comprises an education in the Principles and Practice of Mining, Boring (in all its branches), Surveying and Bore-Hole Surveying, Petroleum Mining Law, and the Transport, Storage and Refining of Petroleum, in connection with which the students will attend lectures and laboratory classes in the sciences allied to the subject.

FIRST YEAR.

(*Fee*, £30 10s. 6d.)

Mathematics.

Physics.

Chemistry.

Surveying.

Engineering, Drawing and Workshop.

Mining I.

SECOND YEAR.

Chemistry.

Geology (including Field Geology).

Engineering Course I.

Petroleum Mining.

Surveying Course II.

Mining Laboratory (including Fuel Analysis and Calorimetry).

Practical Mineralogy.

THIRD YEAR.

Surveying (including Bore-hole Surveying) and Mining.

Laboratory (including the examination and analysis of Petroleum).

Chemistry of Petroleum Refining.

Engineering, hydraulic and laboratory.

Engineering practice in the Power-Station and Workshop.

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Geology.

Special Petroleum Mining Geology (including Field Work).

MINING AND METALLURGY.—We would point out that it is imperative that a young man should go to a place of training where practical work is combined with scientific instruction. We will deal at some length with typical Institutions—the Royal School of Mines, South Kensington; the University of Sheffield; the Wigan Mining and Technical College, Lancashire; and the Armstrong College, Newcastle-on-Tyne.

The diplomas of these institutions are all approved by the Home Secretary for the purposes of the Coal Mines Regulations Acts, 1887, Amendment Act, 1903, and so they are valuable toward securing the Coal Mines Manager's Certificate.

Under Section 23, Subsection 1, of the Coal Mines Regulation Act, 1887, no person can obtain a certificate unless "he shall have had practical experience in a mine for at least five years." By the Amendment Act, 1903, in the case of candidates who have received a diploma in scientific and mining training, or a degree which includes scientific and mining subjects, the period of practical experience will be reduced from five to three years.

We would also draw attention to the School of Metalliferous Mining (Cornwall); special facilities are there afforded in tin and copper mining. We will deal further with the School later on.

AT THE ROYAL SCHOOL OF MINES, the training afforded is very thorough. The Royal School of Mines is now incorporated with the Imperial College of Science and Technology. The course of instruction lasts for four years, and is of a general type during the

first and second years. The fees amount to an average of £45 per session. The Associateship is granted in Mining and in Metallurgy.

The special mining course of the Royal School of Mines is confined to the third and fourth years, and embraces theoretical and practical instruction in Mining and Mining Machinery, Mine Surveying, Economic Geology, Metallurgy and Assaying, Ore Dressing, Economics of Mining, Electrical Engineering, and Tropical Hygiene.

The course may include practical work in making exploratory bore-holes; washing ores with the batea-pan and vanning-shovel; sampling minerals for sale; splicing and knotting ropes; testing strength of wire ropes; estimating impurities in air; dressing ores on a working scale.

There may also be excursions for the purpose of visiting mines, quarries, and works.

The Associateship in Mining, A.R.S.M., will not be awarded to a student until he has completed, in all, six months' practical experience of underground work in a mine; of this, one-half at least should be completed before the student attends the lectures on mining. The practical experience shall mean at least 720 hours underground in shifts averaging not less than six hours' duration. One-half of the whole time should be spent at a colliery, and the balance at an ore-mine.

In selecting a mine for practical work, the student should consult the Professor of Mining or the Instructor in Mine Surveying.

Diary forms must be obtained from the Registrar, or from the Demonstrator in Mining, before each vacation, and each student must state on these how he has been

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employed, the statements being countersigned by the managers of the mines at which the student has worked. He should also make careful notes and sketches while engaged in this practical work. These diary forms and note-books must be handed to the Demonstrator in Mining during the first fortnight of October in the fourth year.

In assigning the final position of the student for the Associateship in Mining, the marks that he has obtained at the examinations in the Principles of Mining, Exploitation of Mines, Mining Plant and Machinery, Mine Sampling, etc., Assaying, Surface and Underground Surveying, and Ore Dressing, as well as those awarded to him for his term's work during the third and fourth years, will be taken into consideration. It is also necessary that each student should pass the examinations in Part I., Metallurgy, Economic Geology, Economics of Mining and Applied Electricity, and make at least 80 per cent. of possible attendance at the class in Tropical Hygiene.

THE UNIVERSITY OF SHEFFIELD.—Degree courses are arranged in Mining, and the degrees are those of Bachelor, Master, and Doctor of Engineering in Mining. The fees are twenty-four guineas per session. Candidates must present themselves for the Intermediate and Final Examinations. A diploma course is arranged for students who desire to obtain their Manager's certificate under Section 9 of the Coal Mines Act (1911), partly by study in the University, partly by practical experience in the mine, and has been approved by the Home Secretary. The fees for the diploma course are—preliminary year, £20 16s.; first year, £12 12s.; second year, £14 14s.; third year, £16 16s.

In Metallurgy, which receives special attention at Sheffield, the courses are divided into four sections :

1. A three years' full-time course for the Bachelor of Metallurgy Degree. (Candidates for the degree must first pass the Matriculation Examination.)
2. A three years' full-time course for the Associateship in Metallurgy.
3. A three years' full-time course in Non-ferrous Metallurgy.
4. Special or part courses.

Fees for the full Metallurgical Degree Course, including the lectures and laboratory courses in the Arts and Science and the Applied Science Departments, twenty-four guineas per annum.

Fees for the Associateship Course, including the Metallurgical Lectures and Laboratories, eighteen guineas per annum.

The laboratory is fitted with the most modern apparatus for metallurgical analysis, more especially with appliances for the rapid and accurate chemical examination of iron and steel, fuel, and refractory materials. It also contains a complete pyrometric installation, and the laboratory for the study of the micrographic analysis of metals is fully equipped with specially designed microscopes by Ross, polishing tables, etching appliances, incandescent light for evening work, etc. A magnetic laboratory and installations for the comparative testing of pyrometers have been fitted up.

The equipment is now the most complete of its kind for teaching the practical manufacture, the chemical constitution, and the physical properties of steel.

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Special attention is given to the determination of the microscopic constituents of steel.

Although the chief industry of the district occupies the central position in the course of instruction, general metallurgy is not neglected, but is dealt with in a separate syllabus, dealing with metals (others than iron and steel) used in the arts. Students are thus enabled to select and at once enter upon a course of scientific metallurgical training of immediate practical utility. They may take up and work through any portions of the course if qualified to do so, but certificates will be granted only to those who follow the prescribed courses and pass the necessary examinations.

An arrangement has been made with the Imperial College of Science and Technology by which the University of Sheffield is recognized as being in association with the Imperial College for such of their students as may desire to specialize in the study of the metallurgy of iron and steel for the Associateship of the Royal School of Mines.

AT THE WIGAN TECHNICAL COLLEGE.—Special opportunities are afforded for acquiring a thorough practical knowledge of Coal Mining. The fees are thirty guineas per session for the first, second, and third years courses. Students desirous of taking the diploma course must not be less than sixteen years of age, must pass an Entrance Examination or produce evidence of having attained a satisfactory standard of preliminary education, and should have had not less than six months' practical experience in a Mine or Works. The College has always enjoyed the generous support of the various Colliery Owners and their Managers. As there are Collieries within ten minutes of the College, exceptional facilities are

offered to students for every detail of Coal Mining in practical operation. Successful Part-time classes have been recently provided for Mining Apprentices, who attend on one whole day per week throughout the session.

AT THE ARMSTRONG COLLEGE, NEW-CASTLE, students can take either their B.Sc. in Mining and Metallurgy or the College diploma in those subjects. Before this end can be attained they must show sufficient knowledge of Coal and Metal Mining, and produce satisfactory evidence that they have spent at least four months in and about a mine. Professor Louis is in charge of the department, and his students have obtained valuable posts in Mining both at home and abroad.

AT THE SCHOOL OF METALLIFEROUS MINING (CORNWALL).—The School is an institution formed by the amalgamation of the three Mining Schools of Cornwall—viz., Camborne, Redruth, and Penzance. This was accomplished under a scheme prepared by the Board of Education, and sealed on October 28, 1909. The Imperial College of Science and Technology, London, appoints two representatives on the governing body. The full diploma course extends over three years, and gives students a sound technical education in Mining Engineering and in allied subjects. The School owns the *King Edward Mine*, and thus special opportunities are afforded for acquiring a thorough knowledge of tin and copper mining. Students are admitted at the age of seventeen or over, and the inclusive fee for all lectures and practical work is thirty-five guineas per annum: the cost of board and lodgings is calculated at 25s. a week. Further information may be obtained from T. Knowles, Esq., Clerk to the Governors, Camborne.

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OTHER INSTITUTIONS.—Courses in Mining are also provided at the Universities of Birmingham, Leeds, and Glasgow, and the Royal Technical College, Glasgow.

MARINE ENGINEERING

The student who intends to devote himself to Marine Engineering or Naval Architecture should proceed for training to some great centre of shipbuilding—the Mersey, or the Tyne, or the Clyde. The University of Liverpool, the Armstrong College, Newcastle, the University of Glasgow, and the Royal Technical College, Glasgow, all provide excellent courses.

At these different centres eminent firms offer students facilities for acquiring practical acquaintance with their work. We may instance, as three good types, the Regulations for the Admission of Pupils and Apprentices that obtain at the works of Messrs. Yarrow and Co., Scotstoun, Glasgow, of Messrs. Swan, Hunter, and Wigham Richardson, Walker-on-Tyne, and of Messrs. Harland and Wolff, Belfast :

MESSRS. YARROW AND CO., LTD.

Applicants for admission as apprentices must be over fifteen years of age, and in thoroughly good physical health.

An application for admission will only be entertained after satisfactory proof has been given that the applicant has been diligent and regular in his attendance during his school career, is of an energetic and persevering character, and has shown some aptitude for mechanical work.

At the time of application the applicant must furnish detailed particulars of his school career, with a statement of prizes and certificates or other distinctions which he may have gained.

The selection of candidates is dependent upon the number of vacancies to be filled and the comparative merits of the applicants. Preference will be given to those who have shown proficiency in

Mathematics, Mechanics, Elementary Physics, and Geometrical Drawing.

No personal influence will in any case be allowed to interfere with these Regulations.

The term of apprenticeship shall be five years.

The rates of pay will be—

5s.	per week	during the first completed year.
6s.	„ „	second completed year.
8s.	„ „	third completed year.
11s.	„ „	fourth completed year.
14s.	„ „	fifth completed year.

Apprentices are required to serve three months of the first year on probation.

Apprentices will be given every facility to attend evening classes, and they will be required to send to the firm, on June 30 of each year, a detailed account of the nature of the studies on which they have been engaged, with evidence, where possible, of the progress they have made; and they must state what studies (if any) they propose to follow in future.

Apprentices will be required to start work at 6.15 a.m., and to conform to the Regulations of the establishment. They may be discharged at any time if their conduct is not deemed satisfactory, or if they should prove to have indifferent health.

Unless special permission be obtained, no holidays will be sanctioned other than those current in the works.

After having been one year at least in the shops, the firm will be prepared to consider requests on the part of apprentices to spend two sessions at the University or Technical College. During these periods they will receive no pay. In case of any apprentice taking advantage of the above course, the time so occupied will be counted towards the completed year, but absence from other causes will not be so counted.

In the event of apprentices being desirous of attending the winter sessions at the University or Technical College, and not being able to incur that expense owing to the non-receipt of wages, the firm will be prepared to consider the payment of wages under special circumstances to a limited number, provided they have served two years in the Shops, and have shown exceptional promise.

Apprentices who have shown special diligence and ability in their work, and satisfied the firm that they have the required theoretical knowledge, will be eligible to fill vacancies in the Drawing-Office

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from time to time as they occur, preference being given to those who have distinguished themselves in the examinations at the University or Technical College.

A certificate will be granted to each apprentice who completes the full term of five years to the satisfaction of the firm.

Students who have distinguished themselves at a University or Technical College will be received under specially favourable conditions.

MESSRS. SWAN, HUNTER, AND WIGHAM RICHARDSON.

I. REGULATIONS FOR APPRENTICES.

In starting apprentices, preference will be given to applicants who bring the best certificates of conduct and character, and the highest school-leaving certificates.

Sons of workmen in this Yard will have special consideration.

At the end of September in each year each apprentice will be awarded marks as follows :

For each approved examination ... See Schedule A.

For time-keeping : a maximum of ... 200.

Marks for time-keeping will be deducted at the rate of one mark for every half-hour lost, but no deduction will be made for special leave or for sickness if certified by a doctor.

Marks may be deducted for misconduct, and a loss of five marks will represent a penalty of 6d. in the calculation of the bonus.

Bonuses will be awarded at the end of the year at the rate of 10s. per hundred marks, but no apprentice will be entitled to a bonus if he has less than one hundred marks for time-keeping.

The apprentice in each shop having the highest number of marks may choose any other shop he wishes for advancement, provided there is a vacancy therein. Vacancies in the Drawing-Office will, at the discretion of the firm, be filled by the apprentices having the highest number of marks.

Apprentices who have served under one year will receive bonuses calculated *pro rata* for the time they have served.

Should an apprentice during the early years of his apprenticeship show exceptional abilities in his studies at the evening classes, and have obtained a sufficiency of marks for time-keeping, and be of good conduct, and have made good progress in the works, he may, at the discretion of the firm, be allowed to attend a session at College day classes.

Marks will only be given for examinations passed in the year for

which the certificate is issued, and for which classes have been attended during the previous session.

Students will be expected to show improvement each year in the result of their examinations, and the full marks allowed for any given pass can only be obtained in one year. Should the student only succeed in obtaining the same pass a second time, the marks obtainable will be reduced by 50 per cent.

A complete list of the apprentices in order of merit, showing the marks obtained, will be posted in the Works, and a record of the relative position of each apprentice in the list will be sent annually to each parent or guardian.

All bonuses of 10s. and over will be awarded half in cash and half in suitable books or apparatus chosen by the apprentice, or wholly in suitable books or apparatus if the apprentice so desires.

II. REGULATIONS FOR PUPILS.

Scheme A.—Youths who have passed through a three or four years' engineering day course at a University College, and who have obtained therefrom either an approved certificate, or a pass degree in Engineering Science or in Naval Architecture, may be admitted into the works as pupils.

They will serve a three-years' pupilage, and for their first year the scale of pay will be that of an ordinary apprentice of the *third* year. The scale of pay for their last two years will be that of ordinary apprentices of the fourth and fifth years, plus 3s. and 5s. per week respectively.

Those who hold a degree with honours may be admitted on the same conditions as the above, but the scale of pay for the last two years will be increased by 4s. and 7s. per week, instead of 3s. and 5s.

Scheme B.—Youths who desire to combine workshop experience with College study, and who hold no certificate or degree from a University College, may be admitted to the works as pupils on the production of evidence that they have received a sufficient preparatory education. A certificate showing they have passed the Matriculation Examination required for graduation in Engineering Science at a Science College of University rank, or an equivalent certificate, will be accepted as evidence of this.

They must give an undertaking that they will attend for at least three academical years the degree course of study at a University College during the currency of their pupilage, which will extend over a period of five years, including the time spent at College.

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Their pay will be that of ordinary apprentices in the corresponding years, plus 4s. per week in years subsequent to the termination of their first year's College training.

Scheme C.—Youths who, having entered the works as apprentices, succeed during their apprenticeship in passing the Matriculation or equivalent examination prescribed under Scheme B, may, at the discretion of the firm, for the remainder of their time be treated as pupils under Scheme B in respect of leave to attend College day classes, promotion, and rates of pay. The time served, including that spent at College, will be a minimum of five years.

It is understood that in every case the advancement of an apprentice to pupil rank is at the option of his employer, and subsequent promotion will depend solely upon merit and the requirements of the business.

In selecting under Scheme C, other things being equal, preference will be given to the sons of workmen and other employees of the firm.

Promotion in general, and admission to the Drawing-Office in particular, will, at the discretion of the firm, depend upon merit and conduct. This clause refers to Schemes A, B, and C.

SCHEDULE A.

EVENING SCIENCE AND ART CLASSES.

Board of Education, South Kensington				Examinations passed		Examinations not passed, but 80 per cent of Possible Attendance and 50 per cent. of Possible Marks for Home Work.
				First Class.	Second Class	
Science Subjects—				Marks.	Marks	Marks.
Stage 1	...	..	50	30	10
Stage 2	...	...	90	50	20
Stage 3	...	...	150	80	40
Honours	...	...	200	120	60
Mathematics—						
Division I., Stage 1	...	...	50	30	10
Division I., Stage 2	...	...	90	50	20
Division I., Stage 3	..	...	150	80	40
Division I., Stage 4	...	...	150	80	40
Division I., Honours	...	...	250	140	70
Division II., Stage 5	...	...	150	80	40
Division II., Stage 6	...	...	150	80	40
Division II., Stage 7	...	...	200	120	60
Division II., Honours	...	...	300	180	90
Freehand Drawing	...	...	50	30	10

		Examinations passed.		Examinations not passed, but 80 per cent. of Possible Attendance and 50 per cent. of Possible Marks for Home Work.
City and Guilds :		First Class.	Second Class.	
Science Subjects—		Marks.	Marks.	Marks.
Preliminary ...	...	50	30	10
Ordinary ...	...	90	50	20
Honours ...	...	150	80	40

Armstrong College (Evening Classes) :

	Division I.	Division II.	Division III.	Division IV.	
	Marks.	Marks	Marks.	Marks.	
Elementary Stage	60	40	30	20	10
Senior Stage ...	140	100	70	40	30
Advanced Stage	250	200	130	90	50

The Technical College, Sunderland (Evening Classes) :

General average of attendance, class work, or home exercises and class examinations—

Stage 1 ..	...	...	...	50
Stage 2 ...	..	...	...	90
Stage 3 ...	...	.	...	150
Honours ..	..	..	...	200

MESSRS. HARLAND AND WOLFF, BELFAST.

The following are the terms for admission of pupils to either Shipyard or Engine Works Departments :

1. Pupils are taken in the Shipbuilding and Engine Works Departments for a term of five years by a yearly arrangement at ages ranging from sixteen to twenty years of age.

Application should be made in the first instance by letter, which should state age, education received, and examinations passed. If the application is entertained, an interview will be given by appointment.

The parents or guardians should satisfy themselves that the pupils evince a keen interest for their proposed careers, and furnish a medical certificate of their physical fitness.

A good technical training, especially in mathematics, is desirable.

2. The terms are £100 per annum, payable at the commencement of each year.

3. Four years will be spent either in the Shipyard or Engine Works (but not in both departments), in the Shops and working on

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the vessels, and the fifth year in the respective Drawing-Offices, as directed by the management.

4. The pupils will be paid at the following rates :

First year	...	...	8s. per week
Second year	...	...	10s. „
Third year	...	...	12s. „
Fourth year	...	...	15s. „
Fifth year	...	...	20s. „

5. The pupils will be granted leave of absence from the Works one day per week for attending approved classes at the Belfast Technical Institute, or other recognized institution, during the sessions.

Subject to the attendance and conduct of the pupils having been satisfactory, the firm will award yearly two prizes of £25 each to the two pupils—one in the Engine Works and the other in the Shipyard—who have passed the highest technical examinations in the course of the year. These prizes will be presented at Christmas.

As an additional inducement, the firm will allow the pupil in each of the two departments who, having served his full five years, in the opinion of the management has shown the best *all round ability*, to spend an additional year in either of the other departments without payment of further fee—*i.e.*, in Shipyard, Engine Works, Electrical Department, Chemical Laboratory, Commercial Department, or at one of the firm's other Works, such time being allotted to each as may, in the opinion of the Management, be best calculated to assist in the pupil's future career.

Marks will be given in the following definite proportion :

			Maximum Marks.
1. Practical ability	...	...	50
2. Technical knowledge	...	...	25
3. Conduct and attendance	...	...	25

The pupil during the sixth year will be paid at the rate of 30s. per week.

When filling vacancies on the Staff, the Management will give special consideration to those pupils who have satisfactorily passed through a sixth-year course.

6. Each pupil is expected to be punctual in attendance, strictly observing the ordinary working hours, and the rules of the firm according to the department in which he is working.

All time lost during each year will have to be made up before

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advancing to the succeeding year's rate, and the term will not be completed until all lost time has been worked.

Pupils desiring leave of absence must obtain permission in writing from their respective foremen or managers. In the case of sickness the firm must be notified in writing at the time, and a doctor's certificate furnished, with a note stating the probable length of absence.

Time worked beyond regular hours, if any, will be allowed to count against lost time, but not to reduce the term.

The firm will keep records of each pupil's conduct, attendance, and result of technical examinations.

7. At the completion of pupilage a certificate will be granted accordingly.

8. The Management has the right of dismissing any pupil whose conduct is not satisfactory, in which case no application for the return of fees will be entertained.

The above rules apply also to the Glasgow, Liverpool, and Southampton works.

THE ROYAL CORPS OF NAVAL CONSTRUCTORS.—

The Admiralty has recently issued revised Regulations relating to the Royal Corps of Naval Constructors, the composition of the staff, the method of entry thereon, and the salaries and prospects of the various officials.

The work of the Corps is carried on by two sets of officials—viz., one at the Admiralty and one at the various dockyards, made up as follows:

ADMIRALTY.				
Officials.				Annual Salary.
Twelve Assistant Constructors (First Class)				
employed as Overseers at Contractor's				
Works	...	...	...	£250 by £15 to £450
Thirty-five Assistant Constructors (First				
Class)	...	...	...	£250 by £15 to £450
Seventeen Constructors				
	...	...	...	£450 by £20 to £600
Four Chief Constructors				
	...	...	...	£700 by £25 to £850
Higher posts				
...	...	£1,000 to £1,200 ; £1,200 to £1,500		
Director of Naval Construction				
...	...	£1,500 to £1,800		

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DOCKYARDS.				
Officials.			Annual Salary.	
Assistant Constructors (Second Class)	£150 by	£10 to £180
Fourteen Assistant Constructors (First Class)	...	...	£250 by	£15 to £450
Twelve Constructors	...	...	£450 by	£20 to £600
Five Chief Constructors	...	...	£700 by	£25 to £850
Three Managers	...	...	£850 by	£50 to £1,000

Many of the above officials receive also house or allowance in lieu thereof. Those serving abroad (Gibraltar, Malta, or Hong Kong) get Colonial allowance in addition, and there are other allowances attached to certain posts.

Method of Entry into the Corps.—The early training is at one of the larger Home Dockyards, and then at the Royal Naval College, Greenwich, during which period candidates are rated as Probationary Assistant Constructors.

The number of Probationary Assistant Constructors to be entered annually will be determined by calculating the prospective requirements of the Corps over periods of four years. Thus, assuming that it can be foreseen that sixteen vacancies will occur during the years 1916-1919 inclusive, four Probationary Assistant Constructors will be entered at Greenwich in each of the four years from 1914 onwards. Unforeseen vacancies may be filled by entering increased numbers in subsequent years, or may be offered to private students of Naval Architecture, as the Admiralty shall from time to time determine.

From about one-half to two-thirds of the vacancies for Probationary Assistant Constructors will be filled by selection from Shipwright Apprentices in His Majesty's Dockyards in the following manner :

(a) The limits of age for the entry of such apprentices will be from fourteen to sixteen years.

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(b) The school training of an apprentice must terminate by the end of his fourth year. Any apprentice, however, of good character who obtains sufficiently good results at the examination at the end of this period, and is recommended by the Director of Naval Education, acting in concert with the Director of Naval Construction, will be eligible for a Cadetship in Naval Construction, and if appointed thereto by their Lordships, will be given a year's course of combined theoretical and practical instruction at one of the large Home Dockyards before proceeding to the Royal Naval College at Greenwich.

(c) On selection for this special course, such Cadets will be required to join with their parents or guardians in a bond for £300 to enter into His Majesty's Service as Assistant Constructors or Draughtsmen, and remain for not less than seven years after the date of the completion of their course at Greenwich if their services are required.

(d) During the year's course of instruction at the Dockyard they will be quartered in the Royal Naval Barracks, and will be given messing allowance of 26s. a month (in addition to the mess contribution of 2s. a day, and the victualling allowance of 10d. a day), and pay at the rate of 8s. a week. They will be granted the relative rank of Sub-Lieutenant, and will wear the uniform of Probationary Assistant Constructors.

(e) To meet the expenses attendant upon their appointment to the Barracks, they will each receive an exhibition of the value of £25, tenable for one year.

(f) Those Cadets who, after a year at the Dockyard, are reported upon satisfactorily, will be eligible for entry as Probationary Assistant Constructors, and will proceed to the Royal Naval College, Greenwich, on October 1 following, for study.

(g) Those who are not satisfactorily reported upon will revert to their old positions as apprentices.

In each year the three Engine Fitter Apprentices who show most promise at the end of their second year in the Dockyard Schools will be allowed the option of transfer to the Constructive Department, and if so transferred will be eligible, equally with Shipwright Apprentices entered as such, to compete for appointment as Naval Construction Cadets on completion of four years' school training.

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A certain proportion of vacancies in the Corps will be filled by candidates selected from outside the Royal Dockyards from among young men who have gone through a sound training in Applied Mathematics and Naval Architecture and have acquired a thorough acquaintance with Shipyard Practice.

Such candidates will be admitted as Probationary Assistant Constructors to a course of training in Naval Architecture at the Royal Naval College, Greenwich, being subject in all respects to the same Regulations as apply to Probationary Assistant Constructors appointed from the Apprentice Class. They will receive an annual inclusive allowance of £120 during their period of training.

They will be entitled to enter the Royal Corps of Naval Constructors if, at the end of the Greenwich course, they succeed in obtaining the necessary qualifying certificate (First or Second Class). In the event of their obtaining a Third Class certificate, they will be eligible, at the discretion of the Board of Admiralty, for appointment as Supernumerary Dockyard Draughtsmen, First or Second Class.

They will be required to enter into a bond to repay to the Crown the whole of the sums paid to them during the Greenwich course, in the event either of withdrawal before the completion of the course, or of failure to remain in the Service, should the Board so require, for a period of seven years after the completion of the course.

Candidates for appointment as Probationary Assistant Constructors under these regulations, in any year, will be invited to submit their names to the Secretary of the Admiralty by April 1, with a full statement of their academic qualifications and practical experience, including experience in practical shipbuilding, and to give the names of referees who may be applied to as regards their scientific education and practical training.

No candidate will be admitted who does not give evidence of adequate technical education, and of having been engaged in practical shipbuilding work for a period which, by the time he is admitted to the College, should in general be not less than a year and a half. A certificate will be required from the Yard in which he has served.

Candidates who satisfy these conditions will be summoned to appear before a Committee of Selection early in May, to which the

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credentials of the candidates, and any information obtained from the referees, will be submitted beforehand, and this Committee will select to compete for appointment such of the candidates as they consider most suitable. The selected candidates will present themselves for competitive examination after passing the necessary medical tests.

The examination to be taken for the purpose of this competition will be the Entrance Examination to the Royal Naval College, Greenwich, which will take place near the end of June, and will comprise the following subjects :

			Marks.
Mathematics (two papers) ...	...	...	200
Applied Mechanics ...	...	...	100
Strength of Materials and Theory of Structures			100
Heat and Heat Engines ...	...	...	100
Electricity ...	...	...	100
Shipbuilding ...	...	...	200

Accepted candidates who have graduated with honours in naval architecture in any of the Universities of Glasgow, Liverpool, or Durham, or have taken honours in the Mechanical Sciences Tripos at Cambridge, will be excused the first year of the course.

Successful candidates will join the Royal Naval College, Greenwich, on October 1 in each year.

Course at the Royal Naval College.—Probationary Assistant Constructors (except graduates in Naval Architecture, alluded to above) are required to remain at Greenwich for a three years' course, during which time they will be paid at the rate of £120 a year.

At the end of each year they must pass an examination, chiefly in technical subjects; and in the Final Examination for the Professional Certificate successful candidates will be divided into three classes according to the number of marks obtained, as follows :

First Class	75 per cent.
Second Class	60 „
Third Class	45 „

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Probationary Assistant Constructors who obtain First or Second Class Professional Certificates on their Final Examination at the Royal Naval College will be confirmed in the Corps of Naval Constructors as Assistant Constructors, Second Class. Those who obtain Third Class Certificates will not in general be admitted to the Corps, but will be eligible to receive appointments as supernumerary Draughtsmen, First or Second Class, in the Dockyards. Those who fail to pass the above-mentioned examination will be liable to be discharged or otherwise dealt with as may be determined by the Board of Admiralty.

On completing their course, Probationary Assistant Constructors will usually be granted three weeks' leave, after which they will join H.M. Dockyards as Probationary Assistant Constructors pending the announcement of the result of their Final Examination and the decision as to their appointment as Assistant Constructors (Second Class), or as Draughtsmen.

After Probation.—Probationary Assistant Constructors, on passing out of the Royal Naval College, Greenwich, will be rated as Assistant Constructors (Second Class). As soon as possible afterwards they will be appointed for a year's training at sea. On conclusion of the sea-training they will remain at the large Home Dockyards for a period of three years before they will be considered eligible for appointment to the Admiralty. During these three years about one-third of their time will be spent in the Mould-Loft and Drawing-Office and the remainder on outdoor duties connected with the building and refitting of ships. They will rank as Subordinate Dockyard Officers.

Assistant Constructors (Second Class) will be promoted to the First Class after four years have elapsed from the date of their certification by the Civil Service Com-

missioners, provided they obtain a special certificate from the head of their department, stating that their work and conduct in the Yards have been entirely satisfactory, and that they are in all respects qualified for advancement to the higher grade.

Assistant Constructors (First Class) at the Dockyards are employed on shipbuilding, or are in charge of the Drawing-Office and Mould-Loft, or are given other responsible duties as the Constructive Manager may think fit.

Assistant Constructors (First Class) at the Admiralty are employed in working out the designs and specifications for ships to be built or reconstructed, analyzing reports on speed, turning, or other trials, stability and qualities of ships generally, and on kindred professional duties as may be directed from time to time.

The duties of the higher posts are mainly connected with the preparation of drawings and specifications of designs of ships to be built or reconstructed, and the carrying out of such experimental investigations as may be directed, together with the actual building, launching, docking, and repair of ships, and the estimates of cost of all work pertaining to the departments.

The head of the Corps (Director of Naval Construction) is the principal technical adviser to the Board of Admiralty in all matters relating to construction.

Retirement and Pensions.—The Regulations governing retirement are the same as those applying generally to the Home Civil Service.

Notes as to Foreign and Sea Service.—Every person entering the Corps is liable to serve at a foreign naval establishment or to proceed to sea if required. Any Assistant Constructor appointed for service at sea shall,

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during such service, be paid at the rate of 10s. 6d. per day, and have the rank of Engineer-Lieutenant, and in all respects the same privileges. He shall be paid a gratuity of £50 for uniform and outfit.

While any officer in the Constructive Corps is serving at sea his time shall count for purposes of civil superannuation.

Private Students of Naval Architecture.—A limited number of students unconnected with the Naval Service will be permitted to receive instruction at the Royal Naval College, Greenwich, in the course laid down for Probationary Assistant Constructors. Such students will be designated "private students."

The full course is for three sessions of nine months each, and no private student, except under special circumstances, will be allowed to remain longer. Students who join the College sufficiently prepared for the more advanced parts of the work may, subject to the approval of the Director of Naval Education, take a shortened course of one or two years.

Fee for each session, £30. Private students reside outside the College, and are afforded facilities for visiting the Royal Dockyards during vacations.

Applications for admission to the College as private students must reach the Secretary of the Admiralty, Whitehall, not later than the end of April each year. A candidate must state his age, and before presenting himself for the Entrance Examination referred to below must also forward an introduction from a shipbuilding establishment with which he has been connected, testifying to his good character and diligence at work, and stating the length of time he has been in their employment.

SUBJECTS OF EXAMINATION FOR PRIVATE STUDENTS.

				Marks.
Mathematics I.	...	...	...	100
Mathematics II.	...	...	...	100
Applied Mechanics	...	...	...	100
Strength of Materials and Theory of Structures				100
Heat and Heat Engines	...	...	...	100
Electricity	...	...	...	100
Shipbuilding	...	...	...	200

This examination will take place at the Royal Naval College, Greenwich, near the end of June each year.

The Director of Naval Education has authority to remit any part of the examination in the case of candidates who are able to offer other sufficient evidence of qualification; but all candidates must satisfy the Director of Naval Construction as to their knowledge of shipbuilding.

Private students will not have any claim to be entered into the Royal Corps of Naval Constructors, even if they should obtain First or Second Class Professional Certificates at the end of their course of training at Greenwich.

Candidates employed in the Royal Dockyards may offer themselves for admission as private students, and are not required to sever their connection with the Service unless and until they become qualified by examination for entry into the College as such.

ELECTRICAL ENGINEERING

In view of the vast and increasing development of Electrical Engineering, it is necessary to deal somewhat fully with this important branch of the profession. We have already pointed out how necessary a mechanical training is for the Electrical Engineer; in fact, it is within the truth to say that some of our best Electrical Engineers

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of to-day are men who were, first of all, trained as Mechanical Engineers, and then added electrical training to their existing knowledge. An ideal course for a youth who intends to take up Electrical Engineering is to pass through the practical training of the workshop, then go to an Engineering College for a course of instruction in the lecture-rooms and laboratories, and finally enter some good firm of Electrical Engineers as an improver. Another course would be for a youth to remain at school until seventeen or eighteen, then proceed to College for a three years' degree course, and afterwards go into "Works" for two or three years, and then, finally, seek at College a further training in scientific theory. This would mean a long course; but electrical science is a vast subject, and the years thus spent would be spent to good purpose. In seeking his theoretical training it is important that a student should choose a University or College where he can come under the inspiration of a Professor who has an assured reputation in the scientific world. Contact with such men means keenness, and it is only by keenness and hard work that the young engineer can succeed. Moreover, such men are always in touch with good firms, and their recommendation may give an earnest and capable man his start, and is often *le premier pas qui coûte*. It would be invidious to mention names, but Professors of this type are to be found at Cambridge, Oxford, Edinburgh, Glasgow, Newcastle, Manchester, Liverpool, Leeds, Sheffield, Birmingham, and London.

Electrical engineering falls into the following subdivisions, and a youth will choose one or more, according to his bent, for special attention:—

1. *Electric Lighting*.—This will include the lighting of towns from large central stations; putting up plants

for independent lighting in country houses, etc.; house wiring and fitting; ship fitting, etc.

2. *Electric Traction.*—Electric trams and electric trains—these indicate the directions in which electric traction has developed so wonderfully within recent years, and is destined to develop still more wonderfully in the near future.

3. *Transmission of Electric Power.*—The electric power of the Falls of Niagara is transmitted to Buffalo City, and the same idea—the production and transmission of electric power—is being carried out on a smaller scale in Great Britain by the Midland Electric Power Corporation, by the County of Durham Electric Supply Scheme, the Clyde Valley Electrical Power Scheme, etc.

4. *Telephony and Telegraphy.*—Good openings in this direction offer in the Post Office, with the Telephone Companies, and with Municipalities—*e.g.*, Glasgow, Brighton, Belfast, etc., who have a licence to set up their own telephonic systems.

The Eastern Telegraph Company, Ltd. (Electra House, Finsbury Pavement, E.C.), accept candidates for their service on the nomination of a Director, and the following are the conditions of service:

Candidates must be between fifteen and seventeen years of age, but are in no case appointed under sixteen. They must be able to pass a Medical Examination as well as an Elementary Examination in Writing, Spelling, Geography, arithmetic, etc., before being accepted.

A premium of £36 is payable to the Eastern Company with each probationer, in six quarterly instalments of £6, paid in advance, and becomes the property of the Company. The expenses of board and lodging in London are borne entirely by the parents or guardians of the probationer, but on his transfer to Porthcurnow or abroad

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(which ought to be at the end of twelve months) the cost of his board and lodging will be met by his salary, plus an allowance from the Company, provided the probationer attains the necessary standards of efficiency fixed for each period of his training. Any failure to attain such standards, or unfavourable report from the Superintendent respecting general ability, conduct, or attention to duty, will either entail the loss of promotion, or the probationer may be called upon to withdraw.

At the end of eighteen months the probationer ought to be qualified to take his place on the staff as a Junior operator, and his board and lodging are thereafter paid by himself out of the salary he receives.

Probationers for the first six months will receive *nil*.

Probationers for the second six months will receive £2 per month.

Probationers for the third six months will receive £3 per month.

Junior clerks for the fourth six months will receive £4 per month.

Junior clerks for the fifth six months will receive £5 per month, and further promotion in accordance with the company's scale of pay in force from time to time.

Should a clerk be sent abroad in the service of any of the Associated Companies, they will provide for him an outfit at a cost not exceeding £30 on his signing the Foreign Service Agreement.

Junior clerks sent on foreign service commence at a salary of £72 (probationers, £60), together with a foreign service allowance, and in addition are provided with quarters or an allowance in lieu thereof.

Promotion to the higher appointments in the service depends on merit and ability, as well as seniority, and the salaries for clerks and officials are as follows :

Clerks—£72 to £240, plus foreign service allowance and quarters.

Supervisors—£216 to £300, plus foreign service allowance and quarters.

Assistant Superintendents—£350 to £450, plus foreign service allowance and quarters.

Superintendents—£500 to £650, plus foreign service allowance and quarters.

The foreign service allowances range from £24 to £250, according to rank and locality.

ENGINEERING [WIRELESS TELEGRAPHY

Candidates for employment are advised that the rule of the service is that each member of the staff should join the Pension Scheme, and pay into the fund the proportion of his salary which may be fixed from time to time.

Should the probationer be appointed to the staff, the Companies require that an Endowment Assurance Policy be at once effected on his life for £100 with profits, payable at death, or after thirty-one annual payments (age forty-eight to fifty). Special arrangements have been made with an Assurance Company to accept the lives of such employees on the certificate of our Principal Medical Officer that they are fit for "Home and Foreign Service." The annual premium to cover residence in all parts of the world has been arranged at £3 7s., which is paid by the Company in advance, and deducted from the employee's salary by monthly instalments of 5s. 7d. The policy issued will be "unconditional and whole world," and will be held by the Companies until it matures or the employee leaves the service.

All candidates will have to sign a five years' agreement as soon as they have been certified as operators. In the case of a clerk under age, the agreement and guarantee must be signed by his parent or guardian. Copies of these documents can be seen on application to the Eastern Company (Staff Department), at Electra House, Finsbury Pavement, E.C.

5. *Wireless Telegraphy.*—The developments of wireless telegraphy have during recent years been so remarkable that the subject demands our particular attention. The steadily increasing adoption of Radiotelegraphy is opening up appointments all over the world not only on land, but also on sea, and even in the air. As a career at the present time openings are practically confined to the staff of the Marconi International Marine Communication Company, Marconi House, Strand, W.C. The lower appointments are not very attractive financially, but parents must bear in mind that an expensive and lengthy preliminary training is not demanded, and the young operator who has spent some time at sea may qualify for a valuable shore appointment, or for a Travel-

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ling Inspectorship, or for a post on the Engineering Staff. Candidates for positions with the Marconi Company must be between the ages of eighteen and twenty-five, and, before being accepted, they must demonstrate their ability to transmit and receive not less than twenty-five words a minute either with key and sounder, or with key and "buzzer." The instruction necessary to pass this test is given at a large number of schools and colleges, and the fee averages about thirty shillings per course: among these institutions we may mention the Empire Correspondence College, 143, Great Portland Street, London, W.; the London Telegraph Training College, Morse House, Earl's Court, London, S.W.; the Manchester and Liverpool Wireless Telegraph Training College, 17, Luce Street, Liverpool; and Carlton House, Fallowfield, Manchester.

Candidates accepted by the Marconi Company, after a medical examination by a doctor nominated by the Company (doctor's fee, one guinea), receive a course of special instruction for about two months as learners at the London or Liverpool School of the Company; during this period they will be paid a nominal salary of seventeen shillings and sixpence per week. On appointment as wireless operators they receive for the first year one pound a week, together with board and accommodation on board ship, the salary rising yearly by increments of two shillings and sixpence per week to thirty shillings. After four years, when the salary is thirty shillings weekly, all found, the increments are five shillings weekly, each year, until the sum of fifty-five shillings weekly, all found, is reached. There is an allowance of two shillings and sixpence *per diem* in lieu of maintenance when employed on shore. These figures represent the minimum salary; as for

special work and service abroad, substantial increases are given.

Every learner must sign a probationer's agreement, subjecting his engagement to termination by the Company on twenty-four hours' notice, and on qualifying for appointment to the staff as telegraphist, a further agreement to serve the Company for at least twelve months.

Holidays are granted at the discretion of the Company to the extent, as a rule, of fourteen days per annum ; cases of sickness are dealt with on their merits.

The life of a wireless operator is an interesting one to young men of a mechanical turn of mind, and those who follow it are enabled to see different parts of the world, as all operators have to serve some years at sea before there is any likelihood of obtaining appointments on shore.

When on board ship, they mess with the officers, and wear a uniform, which is provided. Their work is sometimes very heavy, and they are not permitted to associate with the passengers, but they have, as a rule, good accommodation.

These prospects may not appear very attractive, but it must not be forgotten that the man who has had a good training in Electrical Theory, and has then acquired practical experience as an operator, may look forward to a post as Inspector or Superintendent, with a salary of about £400 per annum.

The rapidity with which wireless telegraphy is extending may be illustrated by the reorganization of our coastal stations now being undertaken by the Post Office. The *Evening Standard* of February 21, 1914, contained the following interesting paragraph :—

The scheme for the reorganization of the coastal wireless stations, undertaken by the Post Office in order to put the coast communica-

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tion on a satisfactory basis, provides for the erection, rebuilding, and fitting of ten main stations.

These stations are at—

Cullercoats (near Newcastle).
Caister (near Yarmouth).
North Foreland.
Niton (near St. Catherine's Point).
St. Just (near Land's End).
Fishguard.
Crookhaven (West of Ireland).
Valencia (West of Ireland).
Malin Head (North of Ireland), and
Scaforth (near Liverpool).

One of the most important stations—that at Fishguard—replaces the old station at Rosslare. The buildings were constructed by the Great Western Railway, and the equipment, which is on the Marconi principle, was provided by the Post Office. The range of the stations is about 250 miles in the daytime, and at night it is reckoned to be up to 1,200 miles.

The St. Just station, which has two 200 feet masts, is probably even more powerful, although at present it is impossible to say exactly what its range is. Signals received by a boat 300 miles west have been reported strong, and messages received at Crookhaven, 200 miles west, were described as “clear as a bell, and very strong.”

At both Fishguard and St. Just the power-room is kept well away from the instrument-room, so that the operator is able to receive messages in absolute silence. The Malin Head station, which, together with those at Niton and Valencia, will be completed early this year, is very similar in design to the St. Just station, but will have only one mast instead of two.

It is hoped that all ten stations will be completed by the end of the year, and afterwards others may be considered. To the imaginative mind the tall, gaunt masts which stand out against the sky as landmarks for miles around are evidence of a great civilizing force. To practical people they anticipate the time when the whole coast of the British Isles will be linked up by chains of wireless communications, which will bring even the lonely lightship-keeper into constant touch with everyday life.

6. *Electro-Chemistry*, which includes gold, silver, and nickel plating, copper refining, galvanizing, etc. This is the field for a lad who combines a love of chemistry with a bent towards engineering.

MOTOR OR AUTOMOBILE ENGINEERING

This branch of Engineering covers a wide and only partially developed field of activity, and offers excellent opportunities in invention and administration. The application of the internal combustion engine to traction on land and sea, to flight, to stationary work for agricultural and lighting purposes, is far from complete. The immediate future will see great increases in the number of road vehicles, particularly for trade purposes, to deal with which large traction companies are coming into existence. Commercial developments may safely be expected to follow on the use of military air craft. The problems of cheap production, the use of cheap fuel, and others remain to be solved.

Advancement may reasonably be looked for in a branch of Engineering undergoing such expansion, provided the engineer starts with adequate training.

Three courses of training are open :

1. University education in Engineering, supplemented by one or two years in the workshops.
2. Apprenticeship or continuous shopwork with evening instruction.
3. Premium pupilship.

The first is the best way for the engineer; but the College work should be completed by the age of twenty or twenty-one at latest. The Universities and Technical Colleges as a rule do not offer special training for Auto-

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mobile Engineers, but offer as a basis a training as Mechanical Engineer. The University of Bristol undertakes the special training of Automobile Engineers, and grants a degree in Automobile Engineering. After the College course, a period in the workshops should follow. A small premium may be necessary. The Daimler Motor Company, Coventry, offer special attractions to the College-trained man, in effect accepting good men without premium. Full information as to the conditions of entry to the various motor works may be obtained from the Secretary, Institution of Automobile Engineering, 13, Queen Anne's Gate, Westminster.

APPRENTICESHIP meets the case of those who cannot command the better training. It is only the exceptional man who can win out this way. Many Coventry motor firms give special facilities to their apprentices, granting two half-days for attendance at the Technical Institute, Coventry, and paying the fees for the boys. Further information may be obtained from the Principal, University of Bristol.

PREMIUM PUPILSHIP is frequently only a means of making money out of pupils, unless provision is made for training in the theoretical side of the work. This cannot be done conveniently and concurrently with the shopwork; but it can be done. Some high-class firms, such as the Sunbeam Co., Wolverhampton, the Napier Co., Acton, London, W., and Sir W. G. Armstrong, Whitworth, and Co., Elswick Works (Motor Car Department), do not receive premium pupils. Other firms, however, of equally high repute have openings from time to time for intelligent youths as pupils. We give below the conditions of pupilage of a selection of four well-known firms—viz., the

Daimler Co., Coventry; the Rolls-Royce Co., Conduit Street, London, and Nightingale Road, Derby; Argylls, Ltd., Alexandria, Dumbartonshire; and the Wolseley Tool and Motor Car Co., Ltd. (Proprietors, Vickers, Ltd.), Adderley Park, Birmingham.

It will be seen that the premiums are about £100 per annum for a pupilage of three years. Pupils are expected to conform to factory regulations and to factory hours (6 a.m. to 5.30 p.m.), and the age for entry should be from seventeen to nineteen. Unless a youth is eager to learn, his only prospect is to become a "tester" at 30s. or 40s. a week; but if, on the other hand, he shows keenness and develops skill and resource, he can attain to a position of importance and substantial emolument either at home or abroad. The conditions of pupilage of four representative firms are as follows:

THE DAIMLER COMPANY, COVENTRY.

1. The Daimler Factory at Coventry affords an unique training ground for young engineers desirous of studying the construction of pleasure cars and commercial vehicles, and the Company welcomes pupils of real ability who are prepared to make a practice of devoting themselves whole-heartedly to the work they take in hand.

2. In order that the practical experience in the shops may be fully appreciated, and may have every opportunity of leading, in due course, to interesting and profitable employment, candidates for admission as pupils must already have acquired a satisfactory training in the science of engineering, and fair competency in the art of machine drawing.

3. Preference will naturally be given to those who bring the highest references from their Professors, but general ability and keenness will count in this as well as scientific attainments.

4. Pupils must work under the shop foremen and charge-hands like ordinary apprentices, starting at six o'clock in the morning and working the full shop hours. Slackness or antagonism to discipline will result in the immediate termination by the Company of the pupilage.

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5. In order to encourage ability and diligence, the Daimler Company awards annual scholarships to the most progressive pupils, and in making these awards, due consideration is given to the pupil's prior record of technical training, as well as to his keenness in his daily work in the shops.

6. The premium is one hundred guineas per annum, payable in advance.

7. The experience afforded covers touring cars and commercial vehicles, and the departments to which pupils may be admitted are as follows :

Foundry.	Gear Cutting.	Repairs.
Pattern Shop.	Inspecting.	Experimental.
Tin and Copper-smiths.	Tool Room.	Stores.
Erecting Shop.	Brass Shop.	Draughting.
Marking Off.	Engine Fitting.	Design.
Drilling.	Gear and Axle Fitting.	Estimating.
Lathe Department.	Engine Testing.	Rate Setting.
Small Capstans.	Chassis Inspection.	Purchasing.
Big Capstans.	Coachwork.	Sales.
Automatics.	Laboratory.	Works Plant.
Engine Parts.	Metallurgical.	Power House.
Grinding.	Commercial Vehicle.	Publicity.
Milling.		Clerical.

8. Pupils must spend not less than one month in a department. It is for the pupil to recognize that his term of pupilage constitutes an opportunity for laying a sound foundation to his practical training, and to take advantage of it accordingly. The total period of pupilage depends on the pupil, as also does his prospect of future employment.

9. Either the Company or the pupil may terminate the pupilage at any time by giving a week's notice. The refund of any part of the premium paid in advance is entirely at the Company's discretion.

10. Each year in January the Company will award a number of scholarships, valued at 25, 50, 75, and 100 guineas respectively, to the pupils who have shown the greatest keenness and ability in their work.

11. Pupils will be paid 5s. per week pocket money.

12. Pupils will be entitled to take 250 working hours' leave per annum, out of which must be deducted all quarters and short leave.

All applications must be accompanied by a written recommendation from the Principal of the Engineering College at which the candidate has studied.

ROLLS-ROYCE COMPANY, LONDON AND DERBY.

Cash premium on signing indentures is £250 for a period of three or four years.

Opportunity is afforded for acquiring a sound practical knowledge of manufacturing, testing, and erecting petrol engines, motor-car chassis, etc.

Hours of attendance :

Monday	...	...	...	9 a.m. until 5.30 p.m.
Tuesday, Wednesday, Thursday,				
and Friday	...	...	...	6 a.m. until 5.30 p.m.
Saturday	...	...	...	6 a.m. until 12 noon.
Meal-times	...	...	...	8 to 8.30 a.m., 1 to 2 p.m.

The proposed apprentice is required to serve a probationary period of at least a month to permit the firm to judge of his suitability for the business. For this month's attendance £10 (ten pounds) is required to be prepaid, but it is returned if the proposed apprentice be accepted or if he be refused by the firm, so that, unless the relatives of the proposed apprentice withdraw him, no charge for the probationary period is made.

A nominal wage amounting to about £65 (sixty-five pounds) in four years could be earned by the apprentice.

Should the proposed apprentice not have attained, after four years' apprenticeship, the age of twenty-one, the firm would require his indentures to extend to the date of his twenty-first birthday. For such extension of the period of apprenticeship the firm would make no extra charge, and would continue to pay the same rate of wages as mentioned above.

ARGYLLS, LIMITED, DUMBARTONSHIRE.

APPRENTICE PUPIL.—The premium charged is £100, returnable in wages as follows :

2s. 6d.	per week	for the first year.
5s.	„	„ second year.
7s. 6d.	„	„ third year.
10s.	„	„ fourth year.
15s.	„	„ fifth year.

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The scheme includes a thorough training in the shops, and at least six months in the Drawing-Office, provided the apprentice shows the necessary talent and intelligence.

It is, of course, to be clearly understood that all apprentices are required to keep exact factory hours and factory regulations, and that the firm have no desire whatever to take apprentices unless they come with the decision to work whole-heartedly and turn out a credit to the Company and themselves.

THE WOLSELEY TOOL AND MOTOR CAR COMPANY, BIRMINGHAM.

The period of apprenticeship depends entirely on the knowledge which the pupil has already been able to acquire at Technical College or elsewhere. Assuming that the pupil already had a fair knowledge of mechanics, the firm recommend an apprenticeship extending over a period of three years, during which period a pupil passes through various departments, finishing up in the Design Department, if he so wishes, and provided he previously makes himself efficient in the special subjects of Mechanical Drawing, Machine Construction, and Mathematics.

The terms are £300 for the period of three years, payable on signing of the agreement.

A portion of the premium is returned to the pupil in the form of salary of five shillings per week for the first year, rising by half-a-crown for each of the following two years. Further, in cases of exceptional ability, the question of remuneration is suitably dealt with.

A pupil who is possessed of a mechanical turn of mind, and is also industrious and observant, may acquire at these works a complete knowledge of motor-car construction,

which may be augmented by attendance at the Birmingham Technical School, where classes are held on Metallurgy and the higher branches of the business which affect design.

AERONAUTICS

Although for the moment the 500 British Pilots who are certificated in this country meet existing demands, yet we may reasonably expect large developments in the future in the science of aviation, and there will be need of a large number of trained airmen. There is something fascinating in the thought of sailing through the air which appeals to the adventurous instinct of youth, and parents may have the comfort of knowing that the admitted risks are being steadily reduced. Alterations and improvements are being introduced continually, and they all tend to greater reliability, efficiency, and safety. Other countries hold the records for distance, height, and speed, but Great Britain may fairly be credited with stability, reliability, and general usefulness in comparison. In the matter of waterplanes, which are of especial interest to an island empire, the most rapid strides are being made, and the British Admiralty is giving the subject close attention. International Pilots' certificates are granted for waterplanes as well as for balloons and dirigibles. There would seem to be openings at many of our watering-places for a careful and competent pilot to give exhibitions, carry passengers, and train pupils: many persons prefer a flight over water to a flight over land, for in the former case an accident is less likely to have serious results.

As our airships become safer and their engines more reliable we may see a rapid development in flying for pleasure, as a dozen years ago in the case of motor-

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ing, and then competent pilots will be at a premium. It would be a mistake to imagine that any pilot can be considered really efficient who can merely fly a machine when it is in perfect order : he must know when it is in order, and how to keep it in order, and how to repair any of the small defects which continually occur both in machine and engine. He cannot hope to do this unless he has had a sound preliminary training as a good-all-round mechanic. Most of the best pilots to-day have spent some years in engineering shops or motor works before they had to deal with the delicate structures of a flying-machine. Such a man if he is thoroughly master of his tools and is adaptable can generally be taken on at one of the Flying Schools without premium, giving his services for a time in return for what he can learn. It will take him at least a year to become familiar with the different parts of machine and engine and to acquire the knowledge necessary to keep them in proper order. He may then with advantage learn the actual flying, and qualify for his certificate. The cost of this will be, for example, from £40 on an Avro Tractor Biplane at Shoreham (Shoreham Flying Co., Shoreham Aerodrome, Sussex) to £100 at Hendon (Willows Aircraft Co., London Aerodrome, Hendon).

Among other British Flying Schools of good standing the following may be mentioned :

The Ewen School, who use the popular Caudron machine, the Ewen Aviation Co., Ltd., Hendon, N.W.

The Bristol Schools, who have passed more pupils than any other school. Terms will be forwarded on application to the British and Colonial Co., Filton House, Bristol.

The Graham White School, Hendon, N.W., whose reputation is widely known. 'Phone—Kingsbury 120.

The Vickers School, Brooklands Aerodrome, Surrey.

For *Waterplanes* we would mention :

The Lakes Flying Co., Cockshott, Windermere, who have trained most of the British Waterplane Pilots up to the present time. The fee is £75.

The Eastbourne Aviation Co. Ltd., the Aerodrome, Eastbourne.

SALARY OF PILOT.—The ordinary salary asked by reliable Pilots is £5 or £6 per week. Popular “trick” Pilots command, of course, much higher figures. If an engagement is taken by the year, Pilots are willing to accept anything from £150 to £400 in Great Britain; in France the rate of pay is a little lower, but those who are willing to fly in Russia, South America, or Japan get much more than they can get in England.

SCHOLARSHIPS IN AERONAUTICS.—The Governors of the Imperial College of Science and Technology, London, award three scholarships to advanced students for research work in problems connected with Aeronautics. The scholarships are tenable for one year, and consist of exemption from fees, plus a maintenance allowance fixed to suit each case, and varying in value from £50 to £150: the scholarships are open to all qualified persons irrespective of residence or place of education.

AVIATION UNDER GOVERNMENT.—It has been remarked that just “as the utilization of steam and the invention of the internal combustion engine changed in important respects the conditions of warfare on sea and land, so aerial navigation will exert a powerful influence on naval and military progress.” Of all the nations of Europe we were the last to recognize the importance of this new arm. “The inclination was to regard both the

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airship and the aeroplane as toys, which might offer new spheres of adventure to the courageous—who were sometimes sneered at as foolhardy—but which could never be of any practical value. We have emerged from this state of incredulous contempt and helpless inactivity, and the year 1913 witnessed, indeed, no little progress, particularly on the part of the Royal Navy. It is the sea service which has made the most conspicuous advance, because it is, and must remain, our first line of defence.

“In the past twelve months under the enthusiastic leadership of the First Lord the Admiralty has made remarkable advances. A Naval Air Department, under Captain Murray Sueter, has been established to watch, guide, and encourage the new arm. Air stations on our Eastern littoral have been set up; we now have a chain stretching from Calshot to Cromarty, with the Isle of Grain, Felixstowe, Yarmouth, and the Firth of Forth as intermediate links. The equipment of the naval wing of the Royal Flying Corps has been much improved. A naval airship station is being created near Chatham, and, besides two small, but useful, airships purchased abroad, good progress has been made in the construction of nearly a dozen other vessels of various types. And, lastly, the Admiralty is taking over the small craft which have hitherto been attached to the Army. It is evident, on the most cursory examination of the events of the past year, that the Navy has made up very considerable leeway, and we could wish that as much progress had been effected in the equipment of the Army with aeroplanes suitable to its sphere of activity. Unhappily, though officers and men have revealed great courage and skill, the task of converting the military wing of the Royal Flying Corps into a well-equipped military force is still far from complete.”

ENGINEERING [GENERAL SUMMARY

Recently published statistics show that the number of flyers in the Royal Flying Corps who hold the certificate of the Royal Aero Club in May, 1913, was 218 as compared with 34 in May, 1912. Of the 218 Flyers, 33 are Officers who have passed the highest test for the Naval Wing, and 68 for the Military Wing. The Government are considering the desirability of establishing, in connection with the Salisbury Plain Central Flying School, a school or schools at certain places on the coast for elementary training in machines capable of alighting on and rising both from land and water.

GENERAL SUMMARY

When a young student has completed his training, whether at a Technical College or in "Works," or, better still, in both, he will choose one or other of the branches of engineering of which we have spoken. In Mechanical Engineering he has a wide range of choice, from a small firm turning out some special kind of machinery, to great works like those of Messrs. Mather and Platt; Messrs. Vickers, Limited; or Messrs. Armstrong, Whitworth, and Co., at Elswick. If Shipbuilding, or Mining, or Electricity specially attract him, he will be guided in his choice by his own inclinations and by his opportunities, and if he resides in a manufacturing or mining or shipbuilding centre, he will naturally seek an opening in the branch more particularly pursued in his locality. If he decides on Civil (or Constructive) Engineering, he will seek admission as a pupil into the office of a Civil Engineer of standing, whether in London or the provinces, and hope by his recommendation later on to secure a subordinate post on some waterworks or sewage disposal

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scheme, or on dock, or harbour, or bridge construction. If he is drawn to railway work, he will, after practical training in a locomotive shop, become a pupil with the Engineer-in-Chief of some large railway company, and, after gaining experience under his guidance, may obtain a similar post with a smaller company at home, or secure one of the many posts abroad that are offered in the opening up of new countries by railway systems.

We have already dealt with the important subjects of Municipal Engineering, and the Indian Public Works Department.

We learn from an eminent firm of Hydraulic Engineers, Messrs. Jens Orten-Böving and Co., that there is at the present time a good opening in Water Power Engineering.

In the Mercantile Marine posts as engineers on our large steamships offer wide opportunities. A year at sea is often recommended to all types of engineers for the valuable experience it gives in developing confidence and resource.

Engineer Officers in the Royal Navy now enter the Service (as we have explained in our chapter on the "Navy") under the same conditions as all other branches of the Service—viz., as Naval Cadets. The rank of the Engineer Officer has been assimilated to the corresponding rank of the Executive Officer. The pay and allowances of engineers is much improved, and the possibility of rising to the command of a ship is now within the reach of a Midshipman who desires to specialize in Engineering.

PROSPECTS.—We now proceed to consider the prospects that lie before the young engineer in the different branches of the profession :—

(a) *Civil Engineering.*—As an assistant under a Resident Engineer on works under construction he will

receive from £100 to £200 per annum. When he has "won his spurs" he may expect as an Engineer-in-Charge from £400 to a £1,000.

A Consulting Engineer, who has made a name for himself and stands high in the profession, will command an income of several thousands.

A borough engineer will receive from £100 in a small rural district to the substantial sum of £2,000 per annum paid to the Chief Engineer to the London County Council. In a moderate-sized town we may say that the pay will range from £400 to £800.

Civilian posts under the Admiralty include those of Assistant Civil Engineers and Assistant Surveyors in Dockyards: they are offered from time to time to open competition, and carry good stipends.

Engine-room Artificers in the Royal Navy are now enabled to reach the rank of Engineer-Lieutenant at an earlier age than was possible before. A selection is made of Artificer Engineers, Chief Engine-room Artificers and Engine-room Artificers, who are likely to prove suitable for the rank. Such selected candidates will be given the rank of Acting Mate, Engineering, with pay at the rate of eight shillings a day, and a messing allowance of two shillings a day. After a course of instruction, and on passing a qualified examination, Acting Mates (E.) will be confirmed as Mates (E.), with the relative rank of sub-Lieutenant, and will be granted a uniform allowance of £50. After serving at sea, and fulfilling the prescribed conditions, Mates (E.) will be eligible for promotion to the rank of Engineer-Lieutenant, and will be granted a further gratuity of £50 for uniform and outfit, and will be governed in all respects by the Regulations in force for Engineer-Lieutenants.

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Full information can be obtained by applying to the Civil Service Commissioners.

(b) *Mining*.—There is the post of Colliery Manager, first as Assistant and afterwards as Chief. The Colliery Manager's Certificate must be secured. At home, many posts are open to well-trained men in our coal and iron mines; a man will probably receive a commencing salary of, say, £150, which will increase according to his skill and worth; abroad, in Australia, India, South Africa, and South America, vast opportunities exist for the man who has knowledge, determination, resource, and character.

Then there is the desirable post of Mines Inspector. A candidate must receive authorization from the Home Secretary before he can present himself for examination. Such an authorization can best be obtained from an M.P., who is either a recognized leader of opinion in mining matters, or has influence with those who are. A candidate should be between twenty-three and thirty-five, should hold a First-Class Colliery Manager's Certificate, and be well-educated, and a man of good manners and address. Examinations are held at irregular intervals, and it is well to make early application to the Home Secretary. The subjects comprise Hand-Writing, Orthography, Arithmetic, Composition, Theory and Practice of Coal Mining, and a knowledge of Metalliferous Mining. The examination is not the most important point, and is not very formidable, being in many respects elementary in character. An examination fee of £6 is required of the candidate.

The salary for Assistant Inspectors is £300 per annum, increasing to about £450, and for Chief Inspectors £600, increasing to about £1,000.

(c) *Mechanical and Naval*.—A good firm will pay a

young man from £150 to £200 per annum as a start, and the future will depend entirely upon himself. As Manager or Chief Draughtsman he may be sure that he will receive his market value, and that value will range from some hundreds to, perhaps, thousands.

(d) *Electrical*.—An Electrical Draughtsman will receive from £70 to £100 as an Assistant, and from £250 to £300 as Chief. In “Central Station” work a “Switch-board” Attendant will have £60 to £80, a “Shift” Engineer £80 to £150, an Assistant Engineer £80 to £200, and a Chief Engineer from £200 to £800 according to the size and importance of the “Station.”

In Installation Work a young Engineer in charge of House-Wiring work will receive about £100 per annum in a small undertaking, and from £200 to £300 in a more important one.

In Marine Work the rate of pay of an Electrical Engineer on a Steamship Company's boat (*e.g.*, the P. and O.) is about £8 per month, with board and quarters; in the Royal Navy it will be £100 per annum rising to £118, with the chance of becoming Chief Electrician, with a substantial salary.

Posts in the large electrical firms vary considerably in value, but we may say with confidence that the well-trained man, who can manage men, is sure of a good stipend, and if, after gaining the necessary experience, he has the capital and the opportunity to set up on his own account, energy and alertness and determination will, in most cases, bring a full reward.

SCIENTIFIC SOCIETIES.—The most important of these societies is the Institution of Civil Engineers, Great George Street, Westminster: a candidate must pass an

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examination for admission, first for the studentship and then for the associate membership. Admission into this, the most comprehensive of the Engineer Societies, should be the aim of every able and earnest student, but it must be clearly understood that examination requirements are supplementary to other requirements relating to practical training and experience, and, as candidates are not allowed to enter for the examinations unless they fulfil these other requirements, they are advised to apply for direct information to the Secretary, Dr. J. H. T. Tudbery, Great George Street, Westminster, S.W. The institution accepts certain examinations—which are set forth in detail in the Regulations—as exempting candidates from their own examinations, and a student who has passed through a College course and has obtained a degree may thus be placed in an advantageous position. The institution consists of Members (M.Inst.C.E.), Associate Members (Assoc. M.Inst.C.E.), Associates (Assoc.Inst.C.E.), Honorary Members (Hon.M.Inst.C.E.) and Students (Stud.Inst.C.E.).

Other societies are the Institution of Electrical Engineers, Victoria Embankment, W.C.; the Institution of Mechanical Engineers, Storey's Gate, St. James's Park, S.W.; the Institution of Mining and Metallurgy, 1, Finsbury Circus, E.C.; Institute of Sanitary Engineers, 120 and 122, Victoria Street, S.W.; Institution of Automobile Engineers, 13, Queen Anne's Gate, S.W.; Institution of Gas Engineers, 39, Victoria Street, S.W.; Institution of Heating and Ventilating Engineers, 304, High Holborn, W.C.; Institution of Mining Engineers, 39, Victoria Street, S.W.; Institution of Municipal Engineers, 39, Victoria Street, S.W.; Institution of Naval Architects, 5, Adelphi Terrace, W.C.

IX

THE TEACHING PROFESSION

I. HIGHER EDUCATION

QUALIFICATIONS.—Those who wish to enter upon the profession of teaching should be assured that they have a real love of the work. They should not be attracted by the idea that the teacher's work is light and his holidays long. A conscientious teacher finds that his work is not over at the close of school. He has to revise some of the work of the day, and ought to prepare himself for the work of the morrow. Long holidays, again, are not always found to be an unmixed advantage, as a teacher of limited income will soon discover. A young man desiring to become a teacher should have physical strength to endure the wear and tear of the profession, he must possess tact and patience, he must love boys, and he must like teaching. Much learning is useless unless it is combined with common sense and a kindly sympathy with the ways of the British boy, for there is truth in the remark that it is the converted burglar who makes the good policeman.

The Register of Teachers is now in existence, and the Board of Education will no doubt insist that teachers henceforth engaged in Secondary Schools, inspected and subsidized by the Board, shall be persons of registrable

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qualifications. This regulation will not extend to the great Public Schools, which do not admit the Board of Education's Inspectors or accept Board of Education grants.

Up to the middle of the year 1918 the conditions according to which a teacher may claim a place on the Register are not to be arduous. Teachers now in existence—that is to say, at work as teachers and being more than twenty-five years old—may pay a guinea, give proof of some amount of general education, show that they have had a few years of experience in teaching, and have their names entered accordingly. But in July, 1918, a new and more stringent condition of registration will come into force. "Training" will then be insisted on, as an essential condition and qualification, and this "training" will mean that for at least one year the applicant shall have had the advantage of being taught how to teach. Some such evidence of that, as the possession of the Cambridge Teachers' Diploma, or the Board of Education's Certificate of Collegiate Training, will have to be produced.

For the post of Assistant in a Secondary School a University degree is in most schools essential, and in all schools desirable. Men with high degrees, assuming that they also have skill in teaching, are practically certain of securing good posts, and of rising in the profession. In the nature of things they can form only a small percentage of the secondary teachers in the country. Among the hundreds of good teachers in Secondary Schools are men who have taken an ordinary degree at one of the older Universities, graduates of a newer University, and certificated teachers who have qualified themselves as teachers in Secondary Schools. At the present time, when science forms so prominent a part of Secondary Education, a Science degree is valuable.

THE TEACHING PROFESSION [HIGHER EDUCATION]

It is becoming the general opinion that teachers in Secondary Schools should undergo some preliminary training. As a matter of common sense, it seems not unreasonable that a Secondary School teacher, in his first attempts, should have something more to guide him than his own reminiscences of the Sixth Form. Courses of training can be taken at Oxford and Cambridge, theory and practice being combined; and all the newer Universities pay special attention to this important subject. The College of Preceptors grants Teaching Diplomas as the result of examinations in the principles and practice of teaching. Particulars of the examinations and of the University courses can be obtained on application. They may be summarized thus: (1) A course of practical training and satisfactory evidence of ability to teach; (2) success in a written examination in the theory, history, and practice of education; (3) possession of a certificate of power to maintain discipline.

PROSPECTS.—The emoluments of Assistant Teachers vary with their subjects, and with their status in a school. The salaries of Science Masters, who are now in considerable demand, may vary from £110 to £400. A Classical Master may receive from £100 to £450 a year; while the salary of a Mathematical Master may be from £120 to £400 annually. Modern Language Masters may receive from £100 to £300; Masters who take general subjects from £70 to £200. If a Master is resident, his stipend will be less in each of these cases by the cost of residence, which we may roughly calculate as £50 per annum; the Assistant Masters who receive the higher scale of pay are generally non-resident Masters in the Public Schools who are not House Masters. A teacher may receive a slight

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additional remuneration if he can teach such subjects as shorthand and book-keeping, or can give instruction in manual work, now often left to a local carpenter, who cannot maintain discipline. Assistants in Secondary Schools have occasionally been able to add to their income by assisting in the work of evening classes, as Mathematical, Science, or Modern Language Teachers.

The prospects, therefore, of Assistant Masters in secondary schools can hardly be described in glowing terms, but now that Secondary Education is demanding national attention, there will be a decided improvement, without doubt, in the near future. There are, of course, the chances of obtaining Head Masterships, but the proportion of such chances is not greater than one in six. Head Masters are, on the whole, respectably paid. In most schools a minimum salary is fixed, say about £150 a year. Beyond this a Head Master receives a capitation fee, never less than £2 for each scholar in his school. Then he has a house provided, or he receives a grant equivalent to the rent of a house. Thus, the Head Master of a school of some 100 boys would have a house, and not less than £350 a year. He has, besides, the privilege of taking boarders. In the largest schools an Assistant Master may become a House Master, and his income, ranging up to £750, is then largely in excess of what a Head Master in a smaller school receives. These prizes of the profession are limited in number, and we therefore find many Assistants drifting off into the Church, private school-keeping, or commercial life. There are occasional good openings in the Colonies for men with high University degrees. The Universities Extension Schemes provide openings of a desirable kind. Lecturers in history, literature, and science, are in considerable demand. Good posts are open to men of ex-

ceptional experience as Directors of Education, with salaries ranging from £500 to £800 per annum, and the best posts on the Inspectorate are often filled direct from the ranks of successful Head Masters. In fact, as public interest in education grows, there will be a large field open for men with special knowledge and an aptitude for teaching.

II. THE INSPECTORATE

It should be borne in mind that the ranks of the Inspectorate, Government and Local, are largely recruited from the members of the teaching profession, and some remarks on the Inspectorate as a career will not be out of place here. Actual experience in teaching has now become an important qualification for the position of an Inspector of Schools, and it is therefore fairly certain that the great majority of our future Inspectors will have begun their career as Assistant Masters, Lecturers, or Tutors. Formerly, the Inspectors of the Board of Education were divided into three grades—Sub-Inspectors, Junior Inspectors, and Inspectors (H.M.I.). The Sub-Inspectors were employed in the inspection of Elementary Schools only, and many were taken from the ranks of the teachers in Elementary Schools. Some years ago, the Board of Education created the grade of Junior Inspector, which was designed to be an intermediate class from which the H.M.I.'s might be drawn after a probationary period, and the majority of these Junior Inspectors have been teachers. At the present time the Board have in their service a small number of Sub-Inspectors, but no fresh appointments have been made for a considerable time. There are also a considerable number of Junior Inspectors, but no fresh appointments

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have been made recently. A new grade has been established, under the title of Assistant Inspectors, who are all drawn from the teaching profession, mostly from the ranks of Elementary School teachers of the best type. Their salary is £200, increasing by £15 to £400, and they are eligible for promotion to H.M. Inspectorships. In addition to the Elementary Branch, the Secondary Branch and the Technological Branch (formerly South Kensington) utilize the services of Junior Inspectors and Inspectors. The several Branches of the Board are no longer in the nature of watertight compartments, and a good many transfers are effected from one branch to another, as well as from the Board's Offices to the Inspectorate, and *vice versa*. For Inspectors of Secondary Schools the chief qualifications are a considerable amount of experience and a rather high standard of education in the way of science, classics, or modern languages. For the Technological Branch, a knowledge of science or art is quite indispensable, as well as some knowledge of applied science or art, and technical work of all descriptions. For the Elementary Branch, the academical qualifications may not necessarily be so high, but a wide range of knowledge is very valuable. Since the system of individual examination and payment by results has given place to inspection and block grants, Inspectors are freed from the immense quantity of elementary examination work that once fell to their share, but there is still a good deal of this work to be done in connection with the Board's examinations of teachers, and the Inspector who is gifted in that particular way can be of great service to the Board. The duties of the present-day Inspector, besides the most important one of being "the eye of the Board," now include those of a collector and compiler of information, an adviser and persuader of

teachers, and not least, of the diplomatist: hence he must be a man of the world, of wide sympathy, and much tact and discretion.

There are special circumstances about the work of the Inspector which should be taken into account by those who wish to take it up. The work is materially different from that of the ordinary Government office, although holidays and pension arrangements are the same. It involves a good deal of travelling, with occasionally an early start from home and long hours of work. The allowances for travelling are on a liberal scale, but even so an Inspector must be prepared at times to face discomfort and all the vicissitudes of weather in this uncertain climate: it is therefore obvious that no one who is not in the enjoyment of full bodily health and strength should undertake the work. Moreover, the work in some districts necessitates sleeping away from home at times, and although this might not trouble the bachelor very much, the family man might find an excess of it irksome. There is also the fact that Inspectors under present conditions have to change their abodes from time to time, and of necessity they have to go where the Board requires them, which is not invariably the locality they would select for a desirable place of residence. But against these minor disadvantages must be set the facts that the position is one of influence, the work is never monotonous, and there is a great deal of open-air work and travelling.

Salaries.—Junior Inspectors, £200 to £400; Assistant Inspectors, £200—£15—£400, with a few going to £500. Inspectors receive £400—£20—£600, Divisional Inspectors £900 a year, and Chief Inspectors £1,000 a year. Inspectors are occasionally transferred to the Offices of the Board, and may fill the highest posts there.

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Inspectors are not appointed by examination, but are simply appointed on their merits. Junior Inspectors must be between 23 and 35 years of age, and must have received a liberal education and have knowledge of the Theory and Practice of Teaching. Applications for nomination must be made to the Secretary, Board of Education, Whitehall, upon a form provided for the purpose, and should be accompanied by not more than six testimonials, one of which at least should relate to Knowledge and Practice of Teaching. There is no examination, except a medical one. Weight is attached to the possession of a University Honours Degree, or some similar distinction, a University Certificate, a Diploma in Teaching, the Board's Elementary Teacher's Certificate, and qualifications in special subjects.

Besides the Government Inspectorate, many Local Education Authorities employ Inspectors for various purposes, and these Inspectors are often promoted to the position of chief educational advisers to the Authority and such-like posts. The salaries and prospects, of course, vary with the locality, so that little can be said as to salaries, but, as a rule, the salary and prospects would be very much better than those of the average Assistant Master.

III. ELEMENTARY EDUCATION

The profession of teacher in an Elementary School offers considerable advantages at the present time, and these may reasonably be expected to increase in the near future. For a boy of fair ability and sound constitution, with means not admitting an expensive training, the prospects in elementary teaching are certainly good. Anyone who is

contemplating the career of an Elementary School Master cannot do better than go to the fountain-head, and consult the pamphlet issued by the Board of Education, entitled "How to become a Teacher in an Elementary School." This can be obtained by a bookseller from the usual Government Agents, and is priced at 4d. The ordinary way of preparing for employment as a teacher in an Elementary School has been to become a Pupil Teacher for two years, and, at the expiration of the term of apprenticeship, to have a training for two years at a Training College. This system has undergone a change. At present there are two methods (*a*) the Pupil Teacher System, (*b*) the Bursar System.

(*a*) *The Pupil Teacher System.*—The age at which a boy can become a Pupil Teacher varies according to whether he can or cannot attend a recognized Secondary School or Pupil Teacher Centre, and this may depend on the place where he lives. Boys who can attend a Secondary School or Centre, and wish to become Pupil Teachers, must, as a rule, be over sixteen but under eighteen years of age at the close of the July 31 previous to their period of recognition. In rural districts, where boys cannot attend a Secondary School or Centre, they may be recognized as Pupil Teachers from the age of fourteen, fifteen, or sixteen. The period of recognition is then four years from fourteen, three or four years from fifteen, and three years from sixteen.

During their training Pupil Teachers spend part of their time in receiving instruction, and part in teaching or receiving training, under supervision, in a Public Elementary School. Those recognized from fourteen are allowed to spend the first year in continuing their general education, without doing any teaching. The arrangements for the instruction of Pupil Teachers differ in method, accord-

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ing to the place where they live. Those who can attend a Secondary School or Centre will go there. Those who cannot attend a School or Centre will receive instruction from the Head Teacher of their school, together with attendance occasionally at a central class, or in some other way.

Small salaries are generally paid to Pupil Teachers in respect of their services in the Elementary School.

The instruction received by a Pupil Teacher during his training is tested by a Leaving Examination, which may be either the Board's "Preliminary Examination for the Certificate," or one of those which qualify for admission to a Training College.

(b) *The Bursar System.*—The alternative system is that whereby the intending teacher, instead of becoming a Pupil Teacher, is nominated as a Bursar.

Candidates must be over sixteen, but not over eighteen years of age at the close of July 31 last preceding the period of recognition.

He must have been educated in an efficient Secondary School for the three years immediately before the period of recognition.

If he has not already passed an examination qualifying for admission to a Training College, the Headmaster of his school must certify that he has a reasonable chance of passing within the year.

If accepted, he continues at the Secondary School as an ordinary pupil for another year, during which time he is expected to prepare for and pass an examination qualifying for entrance to a Training College. After this he becomes either (1) a Student in a Training College or (2) a Student Teacher.

If he is a Student Teacher he is employed as a Salaried

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Teacher in an Elementary School, under qualified supervision, in accordance with the provisions of the scheme approved for the particular area by the Board of Education. At the same time, he is allowed time for continuing his studies for a higher qualifying examination.

The Board of Education has now abolished the qualifying examination. Intending teachers, whether they become Pupil Teachers or Bursars, now apply to the Local Education Authority, and, provided that their references are satisfactory, are accepted. Certain authorities, however, have instituted a qualifying examination of their own, and parents who desire their sons to become Elementary School Teachers should communicate with the Local Education Authority not later than April in the year in which it is desired that recognition should begin.

Many of the Education Authorities have established a system of scholarships for those who intend to be teachers. These scholarships frequently provide, in addition to free education, a grant towards travelling expenses (where incurred) and occasionally a maintenance allowance.

Preliminary Certificate Examination.—The Preliminary Certificate Examination is held in two parts at certain recognized centres. Part I., which is held in December, is really a qualifying examination, and lasts two days.

Candidates in a Secondary School or a Pupil Teacher Centre are “internal” candidates; others are “externals.” Internals apply through their Correspondent before November 1. Externals apply to the Local Education Authority for Higher Education, in whose hands the arrangements now are, before October 1.

The subjects of examination are Reading, Penmanship,

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English Composition, Arithmetic, Drawing, and Theory of Music.

Candidates who pass Part I. of the Examination proceed to Part II., which is held in the following April. This part consists of (*a*) three compulsory subjects, viz., English Language and Literature, History, and Geography; and (*b*) the following optional subjects: Elementary Mathematics, Elementary Science, Latin, Greek, French, German, Welsh, and Hebrew.

One or more optional subjects may be taken, but no candidate may take more than two languages.

Further details may be obtained from the Secretary, Board of Education, Whitehall, S.W. A pass in the Preliminary Certificate Examination qualifies for recognition as an uncertificated teacher, and also for admission into a Training College. As, however, the number of those who desire to enter a College vastly exceeds the number of vacant places, those candidates who obtain distinction in some or all of the subjects usually get the preference.

A number of examinations are, under certain conditions, recognized by the Board of Education as equivalent to the Preliminary Certificate Examination; among these are the Oxford, Cambridge, and Durham Senior Locals, and the Matriculation Examination of the London, Manchester, Liverpool, Leeds, Sheffield, Birmingham, and Welsh Universities. Before a candidate is admitted into a Training College, the Medical Officer of the College must certify that his health is satisfactory, and that he is free from bodily defect or deformity; and the candidate must sign a declaration that he intends *bona-fide* to adopt and follow the profession of teacher in some school, Pupil Teacher Centre, or College recognized by the Board of Education.

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The period of training is generally two years, though provision is made for a training of one year for those who have already passed the Certificate (not the Preliminary Certificate) Examination, or certain other examinations recognized by the Board of Education.

The course of study in Training Colleges is directed mainly to the Certificate Examination, which is held at the conclusion of the period of training. In many of the Colleges, notably the Day Training Colleges at the different Universities, at University College, Nottingham, and at University College, Reading, there are special facilities for preparing for University degrees, and promising students would do well to make use of them.

For this purpose the course of training is extended to three years, and may in the future be extended to four. Those students who wish to read for a degree are required, before entering College, to pass, under certain conditions, the Matriculation Examination of one of the following Universities: London, Birmingham, Manchester, Liverpool, Leeds, Sheffield, Wales, or the Cambridge or Oxford Senior Local in subjects corresponding to those required in the Matriculation Examinations, or the Preliminary Certificate Examination with distinction in six of the seven subjects which can be taken in Part II. of the Examination.

The cost of the Training College course is not excessive, amounting to from £10 to £20 per annum for tuition, board, and lodging. The Day Training Colleges are usually the more expensive, but at certain Colleges, *e.g.*, the Armstrong College, Newcastle-upon-Tyne, scholarships are obtainable, which materially reduce the cost. Some Local Education Authorities, also, award Training College Scholarships to promising students in needy circumstances.

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For the man who is anxious to secure an Oxford or Cambridge degree, the facilities offered at these two Universities will be of interest, and we give them in detail :

PUPIL TEACHERS' UNIVERSITY SCHOLARSHIP COMMITTEE, DRAPERS' HALL, E.C.

The Committee offer six or more scholarships of £25 a year, tenable for three years, at Oxford or Cambridge.

The scholarships are provided by the Worshipful Company of Drapers, and are intended for those who look to become teachers in Primary Schools. They are restricted to those who agree to serve in State-aided Schools.

1. The scholarships are granted in the first instance for one year only. They will be renewed on satisfactory evidence of progress and good conduct.

2. A certificate of birth must be produced. Testimonials are required from the Managers and Head Master of the School in which the Pupil Teacher has been engaged, and also from two other responsible persons. Originals of these, as well as copies, should be sent. The birth certificate and original testimonials will be returned.

3. In the February of each year the Committee will hold an examination in London and at convenient centres, in Classics and Mathematics. An English Essay will also be set.

The examination in Classics will include questions on Latin and Greek accidence, simple passages from Greek and Latin prose writers for translation into English, and a short English passage for translation into Latin.

The examination in Mathematics will include questions in Algebra, up to and including the "Binomial Theorem" and Logarithms. Euclid, Books I. to IV. Trigonometry, up to and including solution of triangles.

No special books are set for translation.

No previous examination questions are published.

As it is desirable that successful candidates should be prepared to pass "Responsions" or the "Previous Examination" as soon as possible after entering the University, they should have begun the study of Greek.

Considerable importance is attached to the English Essay.

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Candidates may also offer themselves for further examination in not more than one of the following subjects :

- (1) English Language and Literature.
- (2) More advanced Classics.
- (3) More advanced Mathematics.
- (4) History, including Geography.
- (5) Chemistry and Physics (in one paper).

4. In awarding the scholarships the Committee will consider the results of this examination and the candidate's personal qualifications.

5. The authorities of various Colleges at Oxford and Cambridge offer further exhibitions to successful candidates. Particulars are advertised in the *Schoolmaster* newspaper in November. Before the Committee's Examination in March following, candidates will be invited to indicate the order of their preference with respect to these exhibitions in the event of their being successful at the examination. Particulars as to the courses pursued at Oxford and Cambridge may be obtained from—

S. S. F. FLETCHER, Esq., M.A.,
"Warkworth House," Cambridge.

G. R. SCOTT, Esq., M.A.,
2, Clarendon Villas, Oxford.

6. Applications are to be made by January 1, on a form to be obtained from—

ARTHUR H. BAKER, B.A., Hon. Sec.,
28, Cautley Avenue,
Clapham Common, S.W.

OXFORD UNIVERSITY DAY TRAINING COLLEGE.

At the examination held by the Pupil Teachers' University Scholarship Committee, in February, the following exhibitions (tenable with the Committee's scholarships) are offered for competition among intending members of the above College, being Pupil Teachers :

Two exhibitions of £25 a year for three years, offered by the Oxford Day Training College.

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One exhibition of £42 a year offered by Brasenose College, Oxford. This is tenable in the first instance for two years, and will be renewed for a third year provided that the Principal and Fellows are satisfied with the industry and good conduct of the Exhibitioner. This will be awarded on the combined results of the Pupil Teachers' University Scholarship Examination, and an examination to be held at Brasenose College shortly afterwards.

All the Exhibitioners will be required to pass or obtain exemption from Responsions not later than the September following their election, and to read for a Degree in Honours.

Particulars may be obtained from G. R. Scott, Esq., 2, Clarendon Villas, Oxford.

CAMBRIDGE UNIVERSITY DAY TRAINING COLLEGE.

Nearly all who come to the College, having been Pupil Teachers, have previously passed the Preliminary Certificate Examination or its equivalent, qualifying them to receive a Government grant of £40 a year, if they are members of a College, or of £25 a year if they are Non-Collegiate Students.

The expenses of a Non-Collegiate Student during the twenty-five weeks of necessary residence are reckoned at £70 a year, exclusive of clothes and travelling expenses. Of this the grant provides £25; another £25 is given to those who are fortunate enough to gain a Drapers' Hall Scholarship; while the remaining £20 must be found by the student himself. The expense of joining a College is higher, but some Colleges have generously offered exhibitions, which go some way to make up the difference. In particular, Emmanuel College offers an exhibition of the annual value of £40 for three years, King's College an exhibition of £30, and Trinity College a subsizarship of £35.

The future career of the student largely depends upon his success in the Certificate Examination; in other words, it depends upon his own industry during his period of training.

When a student has completed his training, he is in a position to become a recognized Certificated Teacher in an Elementary School. The Board of Education also recognizes, as Certificated Teachers, any graduates or persons

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qualified by examination to become graduates of any University in the British Empire provided they hold, in addition, a certificate of proficiency in the Theory and Practice of Teaching granted by the Universities of Oxford, Cambridge, London, Durham, Manchester, Edinburgh, or Dublin, or by the College of Preceptors.

A young teacher, coming from a Training College, or just entering upon the work of teaching, is strongly advised to become an Assistant in a good town school, rather than take the Headship of a small country school. The experience gained thereby will be found invaluable.

PROSPECTS.—At the present time there is a great demand for Assistant Teachers, and it will be some time before the supply overtakes the demand. The remuneration varies in different localities. Almost every Local Education Authority now has adopted a “Scale of Salaries,” and by that “scale” teachers are paid, according to length of service and the size of their school. It is noteworthy that many Authorities are even now revising their their “scales” in an upward direction, and it is probable that the process will continue. It is almost a certainty that the pay of the Elementary School Teacher will be materially increased during the next few years. The statistics published by the Board of Education for 1911-12 show the average salary of a Head Teacher is £177, and of a Certificated Assistant £128 11s. Of the whole body of teachers, the statistics show that 61 per cent. get over £150, 32 per cent. get over £200, 13 per cent. get over £250, 5 per cent. get over £300, and a fortunate 2 per cent. get over £350. Again, of the Assistants 79 per cent. get over £100, 28 per cent. get over £150, and 7 per cent. get over £200. We may select London,

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Birmingham, and Carlisle. In London the commencing salary of an Assistant Master is as a rule £100, rising by annual increments of £5 for two years, then of £7 10s. up to £150. If reported upon satisfactorily he may then receive further increments of £7 10s. per annum until a maximum of £200 is reached. Trained Certificated Teachers who have taken a University degree commence at £110 per annum. In Birmingham the salary of a Certificated Assistant Master, College Trained, starts at £85 and rises to £150; Non-College Trained, £75, rising to £150; Chief Assistant Masters in Classroom Schools receive £100 and rise to £185. The salary of Head Masters ranges from £190 to £325 per annum.

In Carlisle, the scale of payments is as follows: Certificated Assistants commence at £75 and rise by annual increments of £5 to £135, and, after five years at £135, to £140, and, after a further five years at £140, to £145. In the case of College Trained Certificated Teachers the years spent in a Training College count as years of service under the Committee. Uncertificated Assistants commence at £60, and rise by annual increments of £2 10s. to £65 per annum.

As a country scale we may instance the Cumberland arrangement. College Trained Certificated Assistants receive £80 to £130, the yearly increment being £5; Certificated Assistants, not College Trained, £75 to £120; Uncertificated Assistants, £55 to £65.

Assistant Teachers will be well advised to employ their leisure time in preparing for a University degree, or pursuing some special branch of study—a science, a language, etc. A teacher who has thus qualified as a “specialist” in some subject has the opportunity of adding to his income by teaching in evening classes.

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When a teacher has spent some time as an Assistant, and his work has been satisfactory to the Authorities, he may reasonably look forward to obtaining the Headship of a school. The remuneration may be generally regarded as fairly good. We may instance the London scale. The schools are graded according to the number of scholars, or to the school accommodation :

Grade I.—200 or under, £10 more than salary under Scale for Assistants, provided that the minimum salary is not less than £150.

„ II.—201 to 400 £200 to £300 by £10.

„ III.—over 400 £300 to £400 by £10.

In Carlisle, the Head Master of a school with an average attendance of under 200 rises by annual increments of £6 from £138 to £192 ; of 200 and under 300, from £144 to £204 ; of 300 and upwards, from £156 to £216.

The Cumberland scale is as follows :

For Schools with Average Attendance for last Three Years not exceeding				Master.
60	...	...	...	£105 to £130
75	...	...	...	110 to 135
100	...	...	...	115 to 140
150	...	...	...	125 to 160
200	...	...	..	135 to 170
250	...	...	...	145 to 180
300	...	...	...	160 to 200
over 300	...	..		By special resolut

The above amounts to include £10 in lieu of house. In the case of Council schools with a house provided, £10 to be deducted from the above amounts.

In most cases an annual bonus is given to teachers, both

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Head Teachers and Assistants, who hold the degree of any University in the United Kingdom. There are some valuable chances of promotion to able Teachers ; for instance, as Assistant Inspectors, Directors of Education, Secretaries of Technical Schools, and Organizing Secretaries for Education Authorities.

The prospects of teachers in the Army and Navy are fairly good, but every teacher must begin at the bottom.

Candidates who pass the Preliminary Certificate Examination, or one of the equivalent examinations, but who do not proceed to a Training College, are recognized as Uncertificated Teachers. They must, therefore, prepare themselves for examination for a certificate, and when they have passed, their prospects are almost as good as those of the men who have been College Trained—at least, so far as Assistant Masterships are concerned. It should be noted that the Board of Education are now seeking to require that all Head Teachers should have been “Trained.” The salaries, which used to be rather low, are now showing an upward tendency. They may begin as low as £45, but the general run is from £55, and it may be noted that 59 per cent. get over £65, 24 per cent. get over £75, 11 per cent. get over £80, but very few get more than this.

Day Training Colleges.

Universities.—Oxford, Cambridge, London, Birmingham, Manchester, Liverpool, Leeds, Sheffield, Wales (Bangor, Aberystwyth, Cardiff), Bristol, Durham.

University Colleges.—Nottingham, Reading, Southampton.

Council Training Colleges.—Of late years many of the larger Local Education Authorities have established their own Day Training Colleges.

IV. PRIVATE SCHOOLS

Private Schools have an important place in our educational system, and we believe that the best of them will maintain that position. We may classify Private Schools, as consisting, first, of the Middle-class School offering a commercial education, generally at a somewhat low fee, at which boys remain until they go out into life ; and, secondly, the Preparatory School, at which young boys, from 8 to 14 years of age, are prepared, at high fees, for entrance into our great Public Schools.

PROSPECTS.—The stipend of an Assistant Master at a middle-class Private School is generally small, ranging from £50 to £150 per annum, or less if resident ; he is frequently a man without a degree, and his future, unless he possesses private means, is not hopeful. As Head Master, if he has means to buy or start a school, he may secure a fair income, say £250 to £350 per annum.

The Preparatory School is in a different category. The Head Master is generally himself an old Public School man, with a good Oxford or Cambridge degree, and he has a staff of young graduates, who are often fair scholars and good athletes. The fees are high, ranging from £100 to £150 or more per annum, but we must always remember that expenses are also high and the risks great. A high-class Preparatory School involves a heavy initial outlay—several thousands—and a constant annual expenditure on buildings and equipment to keep it up to date. Its risks are many : an outbreak of infectious illness may spell ruin ; the locality in which the school is placed may forfeit popular favour, and the school must either, at heavy cost, change its locale or lose its connection ; again, money

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invested in a Private School is often an unrealizable asset, for the connection of a Preparatory School depends so much on the personality of the Head Master that, if he dies suddenly and his successor is unknown to the parents, its value is sadly impaired.

As an Assistant Master in a good Preparatory School a young graduate will receive a commencing stipend of £100 with board and lodging, "and men who throw themselves into the work and make themselves useful and efficient can rapidly double their salary." (See Board of Education Special Reports, vol. vi.) While he is young and hopeful, his life is a delightful one, but his chances of obtaining such a stipend as will enable him to marry are small.

If, as Head Master, he has the means either to purchase a school, or to start one in an attractive locality, he must be prepared for a heavy outlay. The Head Masters of a few of the leading Preparatory Schools make princely incomes, but they are the exception, and it is probably true that an income of £500 is a fair average. (See Special Reports, vol. vi., p. 416.)

X

ART

I. MUSIC

THE musical profession is one in which the advantages of a sound general education are increasingly recognized. In some branches of it, at least, a public school or grammar school training is almost an essential preliminary, and for many of the best posts a University Arts degree is, if not essential, at any rate a recommendation which carries the greatest weight.

QUALIFICATIONS.—The profession should not be entered by anyone who has not a very real and distinct talent for music. There is little room for mediocrity, and before deciding to have a boy trained as a professional musician, parents would be well advised to take the opinion of some recognized musical expert as to his ability and prospects of success.

The career offers few attractions from a purely monetary point of view. At the same time, it enables the whole-hearted musician to devote his best to the pursuit of his art, and that which is his greatest happiness ceases to be a mere amusement, and becomes the real business of his life. Some of the most eminent solo performers, whether as instrumentalists or vocalists, no doubt command high

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fees, and make a large income. But besides their exceptional capacity, the element of good fortune certainly contributes to their success ; for many extremely brilliant performers are turned out year by year from our Colleges and Schools of Music who never get a chance of achieving distinction. Therefore to train a boy with a view to his becoming a “virtuoso” soloist involves, at any rate, a considerable risk. The prospects of would-be composers are not more definite : the expense of publication and the difficulties of securing performance preclude any certainty of a composer, pure and simple, making even a livelihood.

There remain, however, certain branches of the profession which a youth of real musical ability can enter, with a prospect of making, if not a large income, at any rate a fair competence.

TEACHING.—The majority of professional musicians probably devote a considerable portion of their time to teaching. This may be either in connection with institutions or in private work. As to the former, there are professorships at the Universities and at the various Schools of Music, mostly occupied by older men of distinction ; and in connection with these there are widespread schemes of local examinations, involving the services of professional examiners. Also at many Public and Private Schools there are Music Masterships, often combined with the post of Organist ; the salaries are about on a level with those of ordinary Masterships, though they do not as a rule rise to so high a figure, nor carry the possibility of having a “house.” At the large Public Schools the post of Director of Music is generally of considerable value, and there are usually a

body of Assistant Music Masters working under him. As to private teaching, the possibilities depend largely upon the success and popularity of the man himself, and the fees chargeable are in proportion to his success.

Comparatively few, however, will care to rely solely on teaching as a means of exercising their profession ; and, though teaching will be the means of supplying the greater part of their income, they prefer to hold some definite position, which incidentally causes them to be brought into public notice.

ORGANISTS.—The majority of Public School or Grammar School boys who enter the musical profession probably do so as Organists. It may safely be asserted that no man who has the requisite ability, combined with a good musical and general education, should, in this branch of the profession, fail to find congenial work ; and if, in addition to a sound technical equipment, he has a high sense of the religious side of his calling, and possesses the necessary qualifications of tact, patience, and power of discipline, he may feel fairly certain of ultimate success.

In preparation for such a career, various courses are open. If circumstances permit, by far the wisest plan for the would-be Organist is to go to the University, and to take an ordinary Arts degree either before or after his purely musical training. There is no doubt that this is of more value to him than any purely musical diploma. At the same time, a University musical degree is of great value, though it does not make up for the absence of an Arts degree. There is a regular and increasing demand for Organists, who are not only musicians, pure and simple, but are also men of general culture and education.

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Musical degrees are obtained at the various Universities in different ways—some requiring residence, some not. The requirements are summarized below. Several of the Colleges at Oxford and Cambridge offer Organ Scholarships or Choral Scholarships, which are often held by Public School boys who intend to make music their profession.

As to the purely musical training, there are in existence several Training Colleges where the best instruction may be obtained (see below). The fees at the best of these will average from £30 to £40 a year, and the usual period of training is three or four years. At many of them scholarships are offered, carrying, in special circumstances, grants in aid of maintenance.

It is also possible for English boys to be trained at the conservatoires which exist in many of the chief towns on the Continent. The fees are as a rule lower than in England, and the opportunities for hearing the best music are greater. Nevertheless, such a training cannot be recommended for boys on leaving school, and its obvious advantages will be far more appreciated by those who are older. In connection with foreign training, mention must be made of the valuable "Mendelssohn Scholarship," founded in memory of the composer, and open to British subjects, by competition, every three or four years.

The above-mentioned courses of training apply, of course, equally to all branches of the musical profession, and not only to Organists. For Church musicians the old plan of training was for a lad to be "articled," generally to a Cathedral Organist; and though this plan is not so generally adopted nowadays, it presents many advantages. It enables the student to get a more thorough

grounding in Church music, and especially in choir-training, than is possible in any institution, and it also ensures for him a large amount of individual attention ; but, as against this, there is less variety of experience. As to fees for becoming an articulated pupil, they vary in different circumstances and are a matter for private arrangement ; but an average premium for an articulated pupil for three or four years might perhaps be estimated at £100.

As a preliminary training for an Organist nothing is of greater value than for a boy to be a Chorister in a good Church or Cathedral Choir : in this way he will gain almost insensibly an intuitive feeling for Church Music which will be of the greatest value to him in his after career.

The salaries attached to Organistships are as a rule very small : at the same time it must be remembered that the number of hours occupied by the work is not great, and there is plenty of time available in which the Organist can supplement his income by teaching, and in other ways. The salaries of Organists at Parish Churches which aspire to a good musical service may be reckoned to vary from about £50 to £100 a year ; the salaries at Cathedrals might be taken to range from about £200 to £350 a year—in some cases including an official residence.

SINGERS.—The profession of Singer offers fairly good prospects, not only to the “ stars ” of the profession, but to those who may be termed the “ rank and file.” Most Singers will aspire to become soloists, either on the Concert platform or in the Opera. The prospects of success are largely dependent upon their ability, as their income is derived solely from the number of engagements they receive, supplemented by fees from pupils. So that,

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though it may at times reach a good figure, it must always be uncertain. There are few posts with a permanent salary open to Singers. But it should be mentioned that at nearly all Cathedrals and certain College Chapels, the men of the choir hold "Lay-Clerkships," which carry a salary of from £50 to £150 a year, roughly speaking. In most cases, Lay-Clerkships carry some provision for a pension, and the short hours of duty enable the holder of such an office to supplement his permanent income with teaching and concert engagements. A good many distinguished Singers have commenced their professional life in this way, and for a young man the experience is of great value. The main qualification for a Lay-Clerk, besides a good voice, is that he should be an almost perfect reader of music.

INSTRUMENTALISTS.—The prospects of Instrumentalists, other than Organists, are not very bright, and except in the case of the most successful soloists, there is little likelihood of a brilliant career. Permanent appointments, except in the case of the few regularly established orchestras, are rare. Pianists and Violinists can gain posts as teachers at Public Schools, thus securing a regular income, but the appointments of this kind which are of much value are few in number. In connection with orchestral work there are, of course, a certain number of Conductorships, which are of considerable value; but they are few in number, and difficult to obtain: they are not to be looked forward to with certainty by any young man entering the profession.

As a rule, then, it would be unwise for a parent to consent to his son becoming a professional musician:

1. Unless in the opinion of a recognized expert he has

real and marked ability, and shows a clear promise of developing musical powers well above the average.

2. Unless he has the prospect of a certain amount of private means, which will enable him to follow his art under favourable conditions, and will prevent his having to spend most of his life in the drudgery of teaching for very small fees in order to make his livelihood.

TRAINING SCHOOLS.—The following are the chief Training Schools for Music :

Royal Academy of Music : Marylebone Road, London. Fees about £40 a year.

Royal College of Music : Kensington, London. Fees about £40 a year.

In connection with the above institutions examinations are held at Local Centres, and in London, for scholarships, under the auspices of the "Associated Board."

Trinity College of Music (Chairman, Sir Frederick Bridge) : Mandeville Place, Manchester Square, London, W.

Guildhall School of Music : Victoria Embankment, London, E.C. Fees about twenty-five to thirty guineas a year.

Royal Manchester College of Music : Manchester. Fees £30 a year. Scholarships offered.

Birmingham and Midland Institute : Birmingham.

UNIVERSITY MUSICAL DEGREES—SHORT SUMMARY OF REQUIREMENTS.

OXFORD.

BACHELOR OF MUSIC—Residence.—A candidate must either (1) have taken the B.A. degree at Oxford, or (2) have passed certain specified groups of the final Pass School, and have pursued, either at the University or at

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some approved institution for musical instruction, a course of study extending over a period of not less than two yearly courses, which shall have been fixed by the Board of Studies for Music.

Examinations.—(a) Arts. He must be matriculated, and must pass the Preliminary Examination for Students of Music (or an examination exempting therefrom).

(b) Music. He must pass three examinations in music, the third of which consists of an exercise.

DOCTOR OF MUSIC.—Two musical examinations, of which the second is an exercise for eight part chorus and full orchestra.

CAMBRIDGE.

BACHELOR OF MUSIC—Residence.—Three years' residence at Cambridge required for the degrees of Bachelor or Master of Music. Candidates for the degree of Doctor of Music must have already graduated in some faculty of the University.

Examinations.—(a) Arts. The Previous Examination, Parts I. and II. (or an examination exempting therefrom).

(b) Music. Examination for the B.Mus. degree, Parts I. and II. (general and special musical knowledge).

MASTER OF MUSIC. — Musical examinations. Part I.: Advanced musical knowledge. Part II.: An exercise.

DOCTOR OF MUSIC.—No special musical examination. The degree granted to those who have submitted approved compositions to a Special Committee.

DUBLIN.

BACHELOR OF MUSIC.—*Residence not required.*

Examinations.—(a) Arts. Matriculation Examination.

(b) Music. Two musical examinations, between taking which candidates must either (1) present an exercise, or (2) undergo a practical test on the organ or pianoforte.

DOCTOR OF MUSIC.—Candidates must either (1) present an exercise, or (2) undergo a practical test on the organ or pianoforte, and must afterwards pass the Final Examination.

LONDON.

BACHELOR OF MUSIC.—*Residence not required.*

Examinations.—(a) Arts. Matriculation (or corresponding School Examination).

(b) Music. Intermediate Examination. Exercise. Final Examination.

DOCTOR OF MUSIC.—Exercise. Final Examination.

DURHAM.

BACHELOR OF MUSIC.—*Residence not required.*

Examinations.—(a) Special Matriculation Examination (or equivalent).

(b) Music. First Examination. Exercise. Final Examination.

DOCTOR OF MUSIC.—Exercise. Final Examination.

MANCHESTER.

BACHELOR OF MUSIC.—*Residence.* Three years' course.

Examinations.—(a) Arts. Matriculation.

(b) First Examination. Second Examination (which includes playing on some instrument). Exercise. Third Examination.

DOCTOR OF MUSIC.—Exercise. Final Examination.

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EDINBURGH.

BACHELOR OF MUSIC.—*Residence compulsory* for a whole winter session, comprising not less than eighty lectures.

Examinations.—(a) Preliminary Arts Examination.

(b) Music. First Examination (including Singing or Playing), as well as Theory. Second Examination (including further art tests). An exercise.

DOCTOR OF MUSIC.—Degrees given in three departments: (1) As Composers; (2) as Executants; (3) as Theorists or Historians.

OTHER UNIVERSITIES.

Musical degrees are also granted by the National University of Ireland, the University of Wales, and the University of Birmingham.

OTHER MUSICAL DIPLOMAS.—Musical diplomas are granted by the Royal College of Organists (A.R.C.O. and F.R.C.O.), and by most of the Training Colleges mentioned above, as well as by certain other institutions, which are entirely reputable. But it is necessary to point out the existence of a certain number of *bogus* "Colleges," which give, or rather sell, so-called degrees without proper authority or recognized examination. The Union of Graduates in Music exists largely to deal with such cases, and in the *Roll and Kalendar*, which it issues annually, may be found full particulars of all recognized musical degrees, as well as much other matter which is of value and interest to those who think of entering the profession.

II. DRAWING AND PAINTING

The number of different careers open to those who have rendered themselves proficient in some branch of Art has greatly increased of late, and students, and schools for their instruction in the technique of their intended profession, are correspondingly numerous. It cannot, however, be too strongly impressed on all concerned that a good general education is of the highest importance before the Art School is entered. Most of the approaches will be in the future absolutely closed to those whose school course has not carried them up to the point of passing one of the Senior Local or Matriculation Examinations: and, obviously, success in the higher branches of artistic work will involve a need for wide culture of a literary and linguistic kind.

QUALIFICATIONS.—No one is likely to attempt any such career without a decided taste and talent for Drawing. Some natural skill in this—some feeling for form and line—is essential. Other qualities can, more or less, be taught: this cannot. The advice of an expert as to the value of the talent that may be present in the beginner, and the prospect of its further development, is usually desirable, and not difficult to obtain. But it is at a later stage, when it becomes a question of turning a partly developed talent to practical use, that the danger of disappointment is most serious. It should be realized from the first that there is nothing light or easy in the work—though superficially the contrary may appear to be true. The difference between the mere useless dabbler and the promising student lies mainly in the difference of spirit in which each does his work. It is only by putting hard thought into their efforts that artists—in whatever branch

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—are made. The painter who was asked, “How do you mix your colours?” and who replied, “With brains, sir,” expressed a truth not by any means generally appreciated. Boys at school usually treat the Art lessons as an agreeable distraction from more severe tasks: but if, later on, they want to succeed as Art students, they find the pursuit as exacting and exhausting as mathematics, and as fruitful in problems that must be solved by concentrated effort.

On the other hand, to those possessing the needful talent and enthusiasm the study of Art and the practice of any Artistic Calling are productive of more actual daily happiness than falls to the lot of most mortals.

Assuming that a boy or girl of seventeen has been well educated, especially in Literature, has a good knowledge of French, and perhaps German, has passed at least a Senior Local Examination, and has a decided aptitude for drawing, and an appreciation of Art in general, then he or she is ready to begin serious study. It is of the greatest importance that the teacher should be himself an Artist. But nearly every town of importance has a well-equipped Art School, wherein such teachers may be expected to be found, and it is only the dwellers in small places that will find any difficulty. The way is open to all, poor or rich. The day-class fees are not high, and evening students are usually charged only a few shillings for the Session (September to May). Scholarships giving free tuition are frequently offered to promising beginners, sometimes with the condition that candidates must come from the local elementary schools: and at the larger Art Schools scholarships of considerable value are often found, open for competition to students already in the school. Evening students and free scholars are expected to take such Board of Education Examinations as they may be prepared for—

but this is, of course, no hardship, as the certificates obtained by success are valuable, and in some cases indispensable. The number of these examinations is now much reduced, and they are taken in groups, not singly.

It is a special advantage of the student of Art that he need not definitely commit himself to the exclusive pursuit of this end until he has practically proved his fitness and the probability of his future success. The larger part of the work of a School of Art is done between 6.30 and 9.30 p.m., and does not interfere with an ordinary day's work in an office or house of business. But there is much to learn, and a great deal to do, and the sooner the student is able to devote himself entirely to his Art work, the better it will be for his chances afterwards. If in need of financial help he may seek a post as Art Pupil Teacher, and to a promising girl or boy, provided with the necessary certificate of good general education, these posts are not usually hard to obtain. They involve the devotion of the whole time to various forms of Drawing and Painting, and to giving assistance in the teaching of elementary work of the same kind. They are renewable from year to year, and a small salary is paid. Though intended primarily to train professional teachers these Pupil Teacherships do not absolutely bind those who take them. At the end of his time the Pupil Teacher has learned a good deal about teaching, but he has also made much progress in many different branches of work, and has fitted himself to a corresponding extent for many different careers.

Some two years after entering the Art School a pupil may be expected to pass the Board of Education "Drawing Examination," which entitles the holder to teach Art in any school under Board of Education rules, and also

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prepares for a career as an Architect. It is equal to the old Art Master's Certificate.

After this the pupil will specialize in one or more of the groups, (a) Painting, (b) Modelling, (c) Design (Pictorial or Industrial). The Board of Education requires that those working under its regulations shall confine themselves during each separate session to *one* of these groups: but most students will, during their stay at the School of Art, study, as subsidiary, one or more groups other than their chosen group.

The resources of a good School of Art are very great, and many years may be spent in progressive study in any one of those in the large towns. The ambitious students will be inclined to try their fortunes at the Royal College of Art (if their object is teaching, or architectural, industrial, or illustrative work), or at the Royal Academy Schools for Painting and Sculpture and Architecture. But at any good School of Art the pupil can qualify himself for all forms of Art teaching, or receive an excellent Architectural training, or specialize in any direction that his future career may require. From the School of Art are recruited direct the great bulk of those whose Art work is connected with industries. The local manufacture usually leaves a deep mark on the character of the local School of Art, which, most rightly, makes a special point of giving the training wanted by the designers of the products of the district. But the range is much wider than this. The efficient Art School trains Etchers, Lithographers and Engravers, Designers of Posters and Advertisements, Illustrators of Magazines, etc.; Artistic Workers in all Metals; Bookbinders, Designers of Wallpapers, Dresses, Carpets, Embroidery, Lace; Tile-painters and Modellers—in fact, it is not easy to enumerate

the almost infinitely various occupations for which the School of Art prepares, in addition to those of the Painter, Sculptor, and Architect, which are more obviously associated with the ideas of Drawing and Painting.

The future Painter of Pictures, who does not propose to teach, frequently on leaving the Art School secures employment in connection with an illustrated paper, and this, indeed, is probably as educative and financially profitable a way as can be found for those who have more talent than money. Those to whom an income is not necessary will probably seek admission to the Academy Schools, or the private schools directed by well-known artists.

FINANCIAL PROSPECTS.—Salaries of Teachers in Art Schools.—Pupil Teachers, £15 to £30 per annum; Assistant Teachers, £80 to £200 per annum; Headmasters, £200 to £1,200.

Of the very various other occupations open to the Art Student who has completed his training, it may be said that all will ensure a competence, and hold out hopes of more than this; but on the condition that he must possess some real artistic ability—not merely mechanical knowledge.

THE ROYAL ACADEMY SCHOOLS.

All instruction is gratuitous, but the student is expected to provide his own materials, except clay for modelling. There is no limit of age for entrance, and rejected candidates may apply again. Application must be made on a form, to be obtained through a Member of the Academy, or other "person of known respectability," which must be sent in on January 1, or June 1, in the

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case of Painters and Sculptors, and on July 1 or November 1 in the case of Architects. With the application must be submitted the following works :

From *Painters* (A—for admission to try for the Lower Schools) :

1. A drawing, not less than two feet high, of an undraped antique statue: the only mutilated figures allowed being the Thesus, Illyssus, and Hermes.
2. Drawings of a head, a hand, and a foot from the cast, full size.

From *Painters* (B—for admission to try for the Upper Schools) :

1. A drawing of a figure from the life, two feet high; the size of the drawing to be 30 inches by 22 inches.
2. The same figure anatomized, showing the bones and muscles, on one sheet of imperial paper.
3. A painting of a head, from the life, life-size, on canvas not exceeding twenty-four inches in its greatest dimension.
4. A painting of a figure from the life, two feet high, on canvas not exceeding thirty inches in its greatest dimension.
5. A design in colour for a composition, not exceeding 24 inches in its greatest dimension.

From *Sculptors* :

1. A model, in the round, about two feet high, of an undraped antique statue.
2. A model, in the round, of a figure from the life.
3. A drawing of a figure from the life, two feet high; the size of the drawing to be 30 inches by 22 inches.

4. The same figure anatomized, showing the bones and muscles, on one sheet of imperial paper.
5. A model of a composition ; the dimensions not to exceed 24 inches in any direction.

From *Architects* :

1. An elevation and plan of a building, or some part of a building, to be done from the candidate's own notes and measurements, which shall be submitted with the drawing ; the notes and measurements to be taken from the building itself.
2. Geometric elevations of the Doric, Ionic, and Corinthian Orders, with their entablatures complete, the columns to be 12 inches high on the paper.
3. An original perspective sketch in pencil of an existing building, or part of a building, on a quarter-sheet of imperial paper.
4. A drawing of a piece of architectural ornament from a cast, shaded in pencil or chalk, or tinted, and of the size of the original.

All the drawings must be on paper, and unmounted.

Or there may be submitted instead of works (3) and (4) a portfolio of not less than six original sketches of architecture, of which one shall be an original design, and at least two others shaded studies of architectural sculptured ornament.

Applicants, who can produce a certificate of fair proficiency from an institution for architectural education recognized by the Royal Academy will be admitted as Probationers without the necessity of showing any works. These institutions are—The Royal College of Art ; the Royal Institute of British Architects ; the Architectural Association ; King's College, London ;

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University College, London; Liverpool University; Manchester University. The list may be added to at the discretion of the President and Council.

Candidates whose works are accepted have then a Practical Examination to pass.

SCHOLARSHIPS.

Students of the Academy Schools under the age of twenty-eight are eligible to compete for certain Scholarships, and in particular every two years for the Travelling Scholarship of £200.

THE ROYAL COLLEGE OF ART.

The College exists mainly to train Art Masters and Art Mistresses, but a limited number of other students are admitted on payment of £12 10s. per term for each of the following courses :

- (a) A course carrying the student through all the four schools (Architecture; Ornament and Design; Decorative Painting; Sculpture and Modelling).
- (b) Courses arranged to include one or more of these.

The *Full Associateship* is granted to students who have qualified in the four schools.

The *School Associateship* is granted to those who have qualified in the school selected by them.

Exemption from fees is granted to holders of Royal Exhibitions, National Scholarships, Free Studentships, and Local Exhibitions, and to others specially recommended by the Principal.

Holders of Local Exhibitions are required to pass an Entrance Test, but holders of the other awards mentioned are admitted without examination.

Other candidates who desire to enter for the course of instruction for the Full Associateship must submit—a fortnight before the end of a term, or half term, or in the case of candidates wishing to enter the College in October who are unable to submit the works earlier, three weeks before the beginning of the session—a folio of drawings as mentioned below :

Architecture.—A careful drawing of a building, or some portion of an ancient or modern building of artistic interest.

Sculpture.—Two studies of heads carefully drawn from life with the point.

Painting.—A drawing in charcoal of an antique figure ; the broad masses of light and shade only to be indicated.

An anatomical drawing (bones and muscles) of the same figure.

Ornament and Design.—Three very careful drawings of flowers and foliage—one in pencil, one in water-colour, one in pen and ink—all from the same subject.

A sheet of lettering done from good Roman capitals. The selection of a good plain type is essential.

(b) Candidates who have had works accepted for the Art Class Teacher's or Art Master's Certificates, or who have obtained awards in the National Competition for work in subjects similar to those required, will not be called on to submit works in those subjects. Candidates wishing to take advantage of this privilege should submit with their applications a list of the successes they have obtained.

(c) If these drawings are accepted, candidates must take Test Examinations in the four subjects, of which they must

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pass in three. Such Test Examinations will be held at the commencement of each term and half term.

The following are the subjects for the test :

Architecture.—A drawing of a small architectural object in the Victoria and Albert Museum selected for the purpose.

Time allowed : Twelve hours.

Sculpture.—A model in clay of the mouth of Michael Angelo's David.

Time allowed : Six hours.

Painting.—A drawing in charcoal from life of the head, hand, and foot, the light and shade being slightly indicated.

Time allowed : Nine hours.

Ornament and Design.—A drawing from memory of a piece of foliage, such as that of the oak, ash, or lime.

Lettering by hand of a given sentence, or a simple problem in designing, to fill a given space.

Time allowed : Nine hours.

(d) Candidates who have passed one of the Board's Art Examinations in 1913, or have obtained first-class successes at examinations prior to 1913, in subjects similar to those required, will not be called on to enter for examination in those subjects. Candidates wishing to take advantage of this privilege should submit with their applications a list of the successes they have obtained.

Candidates who have sat for examination in 1913 and failed, may apply to have the work done by them at the examination considered and a decision given as to whether they may be exempted from any part of the test.

A candidate who desires to enter for the course of instruction for the Schools Associateship (*i.e.*, to specialize

in one or other of the four schools) must state the school to which he desires to be admitted. His application, with the required works, where exemption is not given from this requirement, must be submitted a fortnight before the end of each term or half term, or in the case of candidates wishing to enter the College in October who are unable to submit the works earlier, three weeks before the beginning of the session.

For details of the works required in each school, the student may consult the prospectus of the College.

Candidates who have had works accepted for the Art Class Teacher's or Art Master's Certificate, or who have obtained awards in the National Competition for work in subjects similar to those required, will not be called on to submit works on these subjects.

There is also in each school a Test Examination.

SCHOLARSHIPS OPEN TO STUDENTS OF THE COLLEGE.

(a) A limited number of Royal College of Art Scholarships of £60 per annum, with free admission to the classes.

(b) Two Student Demonstratorships of the value of 30s. per week.

(c) One Travelling Scholarship of £65 may be awarded each year.

SCHOLARSHIPS ADMITTING TO THE COLLEGE.

1. Royal Exhibition (£60 for three years).
2. National Scholarships (£60 for three years, and free admission to the lectures of *one* of the schools of the College).
3. Free Studentships (free admission for two years to lectures, etc., of *one* of the schools of the College).

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4. Local Exhibitions (£50 or less per annum, half contributed by the Local Education Authority and half by the Board of Education, with free admission to the classes).

Royal Exhibitioners and National Scholars may be required to assist in the teaching work of the College. They are allowed third-class railway fare from and to their home *once* each session.

All these are awarded in connection with the Board of Education Art Examinations in May.

III. THE STAGE

REQUISITE QUALIFICATIONS OF ASPIRANTS TO THE STAGE.—The stage should never be taken up by young men who have tried other professions because they preferred them, and have failed. The right kind of aspirant for the stage is the boy of eighteen to twenty-four, who has just left a Public School or the University, and who feels that he has talent which his contemporaries do not possess for impersonating other characters. If this feeling is genuine, he will probably be modest about it, but determined to centre his time and energies on giving it expression. He will have to decide whether he means to use this talent as a means for earning his livelihood or merely as a hobby. If the former, he ought to take at least one year's training. It is a curious fact in Dramatic Art that those who have most in them require most training; the strength of their feeling often warps the artistic expression of it, and the sublime and ridiculous come into perilous contact. The same may almost be said of the Comedian, who has to learn not to be amused at himself if he is to amuse his audience.

We should advise a boy entering on his dramatic training to ask the authorities to tell him whether his talent is marked enough to make it worth his while to go on the professional stage; and, what is more difficult, to take their advice after he has undergone the test of a term or two's training. Speaking broadly, the stage is a good profession for those who can get out of the ruck, but a bad one for those who cannot.

For everyone entering the profession moral stability is essential. The drifter by nature is sure to get into a backwater; he had better go into an office, where there is a ready-made atmosphere and discipline for him to cling to.

COST.—The fees at the Academy of Dramatic Art are £1 1s. Entrance Fee; £12 12s. a term; three terms in the year. The course comprises every branch of work for thorough Stage training; and the hours are 10 to 5 every day, and Saturday mornings. Three Scholarships are given every year to young men—*i.e.*, one to the most promising student of each term.

MONETARY PROSPECTS.—The average salary for a qualified student is about £2 2s. a week. Students who have limited financial resources often have the opportunity of obtaining walking-on engagements at £1 1s. a week during their course at the Academy. It is difficult to gauge the emoluments of the successful and experienced actor or actress, for they range from £500 to £1,000. The former figure may be taken as the reward of moderate success.

TRAINING SCHOOLS.—As far as we know there is no institution which gives a better all-round, practical and artistic training for the Stage than the Academy of

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Dramatic Art, 62-64, Gower Street, W.C. We say this because the Academy of Dramatic Art makes a speciality of training students in the various kinds of Drama, in Shakespearian Comedy and Tragedy, in old Comedy, in Modern Sentimental and Farcical Comedy, in Realistic Drama, and in plays of dramatic and even melodramatic interest, to teach students to distinguish and be able to assimilate the various spirits which go to make up the world of the Theatre. The Academy, however, does not train for Musical Comedy. One of the functions of the Academy of Dramatic Art is to provide a ground upon which young men of good education, who think they have the talent for acting, can in a short time put that notion to a real test. Our opinion of the Academy of Dramatic Art is founded on the fact that the following form its Council: Sir Squire Bancroft (President), Sir James Barrie, Sir John Hare, Sir Arthur Pinero, Sir H. Beerbohm Tree, Sir George Alexander, Sir J. Forbes-Robertson, Mr. Arthur Bouchier, Mr. Cyril Maude, Mr. E. S. Willard, Mr. G. Bernard Shaw, and Miss Irene Vanbrugh. The Administrator (to whom application should be made) is Mr. Kenneth R. Barnes, M.A.

Other schools to which attention may be called are—

The School of Musical and Dramatic Art (President, George Edwardes, Esq.), 38, Great Ormonde Street, W.C.; and Stedman's Stage School (where Cinema acting is taught), 43, 44, Great Windmill Street, W.C. For Shakespearian work, Mr. F. R. Benson has a school which has shown excellent results.

At the present time we do not regard the dramatic profession as over-crowded for men, except in the lower ranks, into which men without either proper moral or artistic qualifications have drifted.

XI

JOURNALISM

THIS profession is unlike all others. Admission to it is free, there are no examinations to pass, no fees to pay, no limit of age, influence probably counts for less in it than in any other, and success depends absolutely on the man himself. On the other hand, competition is severe and the profits at all times precarious.

One must be content with small beginnings, either as a contributor to magazines or as a newspaper man. Frequent disappointments may be expected at first; we have all heard—it is a favourite subject with the story writers themselves—of the difficulty of getting work accepted, of sending an article or story to office after office only to receive it back again with the Editor's compliments and regrets. The writer who has reached the ear of the public must exert himself to keep it; he succeeds best who can best discern the drift of the public taste, and, by following it, he may perhaps some day help to lead it.

NEEDFUL QUALIFICATIONS.—What, then, are the qualifications likely to bring success? To begin with, it must be the youth's own choice; if he himself does not declare a strong inclination for it, Journalism is the worst occupation to recommend. But many people think they

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could easily become successful writers ; there is a certain glamour about literature, a notion that it must be an easy way of making money, and must bring with it a delightful freedom from convention and responsibility. This is largely an illusion ; there are several qualifications besides inclination for which we must look in the budding Journalist.

First, as regards knowledge and ability : he should be an "all-round man," rather than very brilliant in any one branch. He will probably have occasion to deal with a large variety of topics, and must be ready, as occasion requires, to turn his hand almost to any subject. The wider his own interests, the more interesting will be his manner of dealing with his subject, whatever it be. Next, as to temperament : he should be of a cheerful and self-reliant disposition. The uncertainty of the profits makes Journalism an unsuitable walk of life for the diffident or over-cautious ; such people should seek some other profession which will bring them an income more certain and more regular.

Thirdly, he should have a pleasant and courteous manner. The Journalist is indeed unseen by his readers, but, to provide them with reading, he must often depend on personal intercourse with others : as Reporter, as Interviewer, as Article Writer, he will have to seek information from all kinds of people ; and to obtain this he must show the tact and courtesy of a man who is self-restrained without being shy, and energetic without being pushful.

Fourthly, as to character : the great essential is industry. In men who hold a salaried post, this is obvious, but it is even more necessary for the "free lance," who is to make his living by occasional contributions to newspapers, reviews, or magazines. He must be able to set himself a

task and fix his own hours of work as strictly as if they were set for him by a master. In the long-run he will find this the only road to fortune.

Before seeking an entrance into the profession, the aspirant should give up the idea that it is easy to dash off something that will pay, and try to test and train his capacity for writing. There are various ways in which this can be done, *e.g.* :

1. *Reproduction from Good Authors*.—Let him read an article or speech carefully, and, having mastered the thoughts of the writer, try to put them down for himself. Then let him compare his paraphrase with the original, and he will learn his own weak points. He will probably find from the comparison that he is apt to repeat himself, that his meaning is not always clear, that his sentences are involved or too long, his adjectives too many, his style too grandiose, or, worse still, too crude a mixture of the stately and the conversational—in short, all the faults usual in beginners.

2. *Précis-Writing*.—This is a useful exercise. Abstract the main points of an article, and compress the whole meaning into the fewest possible words; then see by comparison how much of it has been left out, and how serious have been the omissions.

3. *Essay-Writing*.—In doing this the main thing is to remember Matthew Arnold's concise yet pregnant saying: "Have something to say, and say it as clearly as you can; that is the only secret of style." Of course it will be necessary to avoid the faults mentioned above. We shall then learn that it is one thing to write a grammatical sentence, another to write an interesting one; one thing to write a series of interesting sentences, and another to compose a coherent paragraph; one thing to have an idea,

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another to convey it to others with effect. We should endeavour to put down our ideas as we should ourselves naturally express them, and avoid imitating another's style. Only thus may the young Journalist hope to develop unconsciously a style of his own.

HOW TO BECOME A JOURNALIST.—There are two ways of entering the Journalistic profession—the regular course of the salaried newspaper Reporter, working his way from a Provincial Weekly to the London or large Provincial Daily; and the “free lance” method, which is the best for a man of ability who can afford to wait for promotion. The latter begins by offering articles or stories to Editors, and, when he gets them accepted, he may become more closely connected with the staff as occasional contributor, then still more closely as regular contributor, and may even enter the editorial ranks.

First Way—as Reporter.—It is easiest and in some ways best to begin by seeking a post on the staff of a small Provincial Paper. The London Papers and large Provincial Dailies are not as a rule disposed to employ an absolute beginner, nor to take trouble to help or teach the inexperienced. Again, the work for these smaller papers is more varied, there being less division of labour among the staff than in the larger offices. In consequence, the young reporter will have to try his hand at almost every branch of newspaper work—paragraphs, local gossip, reports of meetings, entertainments, speeches, etc. This gives him an excellent chance of finding the line for which he is best adapted, which he can use to his advantage if he afterwards proceeds to a more important paper. Of course proficiency in shorthand and a sound general education are quite indispensable. To attain the former, he must prac-

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tise it daily for a considerable time. If he learns the subject at school, and has exercises to write in it, he should supplement them by constant practice on his own account.

It is an advantage to have an introduction to a local Editor, but there is nothing to prevent the aspirant introducing himself or answering the advertisements which are often inserted in the papers—*e.g.*, *Daily Telegraph*, *Daily Chronicle*, *Daily News and Leader*, and others. The application should be short and to the point, stating the qualifications possessed, proficiency in shorthand, general education, etc., without unnecessary amplification or too many references.

Emoluments.—At first, the salary will be small, probably less than a guinea a week; but the appointment must be regarded as practically an apprenticeship. In the larger papers a beginner may obtain three or four guineas a week, and, if he develop distinct ability in any particular line, he may rise from that to four or five hundred a year. The Second or News-Editor of one of the larger papers may receive little less than a thousand a year, and the Editor from one to two thousand.

Second Way—the “Free Lance” Method.—Having determined on entering the lists as a “free lance,” the beginner should be careful in his choice of a periodical, study it to see the type of articles it publishes, and try to make his own efforts run on similar lines. This may save many of the disappointments before alluded to.

Emoluments—He will not expect to make much at first, but his pay will depend on the merit of his work, and need not be the less for his not becoming known. The rates of pay vary: for magazine articles with illustrations ten guineas is a usual sum in the best popular monthlies, five in others; but twenty guineas or more may

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be offered. For contributions to newspapers usually one guinea for a thousand words is paid, but, if the work is one involving special research or knowledge, twice that sum is often given. If he has the capacity, and takes the requisite pains, the beginner may reasonably expect to make £100 in his first year, and, as he becomes known and more experienced, may soon make twice or three times as much. There will be successes and disappointments, good years and bad, as he goes on, and it is only the most fortunate who are likely to reckon their incomes in thousands. But for a capable writer, an average of £500 a year is not unusual.

If he has sufficient means, he cannot prepare himself better than by a University course. A good degree in Classics, Law, or History will not in itself weigh much with an Editor, but the man who can obtain one is likely to make a success in Journalism, if his tastes lie in that direction. Moreover, life at the University will bring him into contact with men of many kinds; he will learn to understand the difference between various schools of thought, and will thus develop the faculties of observation and sound judgment.

The Institute of Journalists has recently discussed the establishment of a School of Journalism in connection with the University of London. Should the project mature and the results fulfil the expectation of the promoters, similar schools will, no doubt, be established in connection with the provincial Universities.

It may be further stated that many of the higher posts on the greater dailies and the great periodicals are held by University men who have worked their way in from the ranks of the occasional contributors.

XII

CHEMISTS

I. PHARMACEUTICAL CHEMISTS

QUALIFICATIONS. — General education should have careful attention, and a sound foundation should be laid in the elements of natural science. In this case, as in so many other cases, it is advisable to pass the Oxford or Cambridge Local Examination while a boy is at school. He should then connect himself with the Pharmaceutical Society of Great Britain. He may obtain registration as an “apprentice or student” by submitting to the Registrar of the Society a certificate of having passed an approved examination, provided the certificate includes the following compulsory subjects: English, Arithmetic, Algebra, and Geometry, and two optional subjects, one of which the Council advises should be Latin.

The six subjects must have been passed at not more than three examinations of the same Examining Authority.

Approved Examinations:

1. *University of Oxford*: Junior or Senior Local Examinations, Higher Local Examination, Responsions.
2. *University of Cambridge*: Junior or Senior Local Examinations, Higher Local Examination, Previous Examination.
3. *University of London*: Matriculation Examination, Higher School-leaving Certificate, Junior School Examination, Senior School Examination.

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4. *University of Durham* : Junior or Senior Local Examinations, Certificate of Proficiency Examination.

5. *University of Birmingham* : Matriculation Examination.

6. *Universities of Manchester, Leeds, Liverpool, and Sheffield* : Joint Matriculation Examination, Senior School Examination, Junior School Examination.

7. *University of Bristol* : Matriculation Examination.

8. *Universities of Edinburgh, Aberdeen, Glasgow, and St. Andrews* : Preliminary Examination in Arts, or Medicine, or Science ; Junior and Senior Local Examinations.

9. *University of Dublin* : Public Entrance Examinations. (For "High Places.")

10. *National University of Ireland* : Matriculation Examination.

11. *Queen's University of Belfast* : Matriculation Examination.

12. *University of Wales* : Matriculation Examination.

13. *Scotch Education Department* : The Intermediate Certificate, or Passes in the Higher or Lower Grade of the Leaving Certificate Examination.

14. *Intermediate Education Board for Ireland* : Senior or Middle Grade Certificate Examination.

15. *Central Welsh Board* : Honours, Senior or Junior Certificate Examination.

16. *Oxford and Cambridge Schools Examination Board* : Higher or Lower Certificate Examination.

17. *Educational Institute of Scotland* : Medical Preliminary Examination.

18. *College of Preceptors* : First or Second Class Certificate Examination.

The Registrar is not empowered to accept certificates of having passed in the required six subjects at an examination of a legally constituted Examining Body not included in the above list or certificates taken at more than three examinations ; but such certificates may be submitted for the consideration of the Council, and each individual case will be considered on its merits. The registration fee is two guineas, and must be sent with a certificate.

The usual course for a youth intended for the career of Chemist and Druggist is to enter a shop as an apprentice.

He may, of course, enter a training institution; but it is considered better that he should become an apprentice in a good shop, where he can gain an acquaintance with the details of the business of Chemist and Druggist, and have the chance of acquiring business habits. In placing a boy, care should be taken that the establishment is one conducted on modern lines. The term of apprenticeship is generally four years. As a rule no premium is required, except in cases where the apprentice boards in his master's house. On the other hand, the wages are merely nominal. A parent has, therefore, practically to meet the expense of maintaining and clothing his son for four years, and the charges connected with his continued scientific training. The boy's future career virtually depends upon the use he makes of the period of his apprenticeship.

The next examination is known as the Minor, which qualifies for registration as Chemist and Druggist under the Pharmacy Act of 1868. The fee is ten guineas. A candidate must be twenty-one years of age, and must have been registered as an "apprentice or student." He must produce a Registrar's certificate of birth, and a certified declaration that for three years he has been registered and employed as an apprentice or student, or has otherwise for three years been practically engaged in the translation and dispensing of prescriptions. The Council of the Pharmaceutical Society recommend that candidates, before presenting themselves for examination, should receive a systematic course of instruction, occupying a period of not less than six months, and including:

- (a) At least sixty lectures in Chemistry.
- (b) Eighteen hours' work in each week in Practical Chemistry.

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- (c) Forty-five lectures and demonstrations in Botany.
- (d) Twenty-five lectures and demonstrations in Materia Medica.

Although the work represented by the syllabus of the Minor Examination might be done in the Science Schools which exist in all fair-sized towns, very few candidates actually sit for the examination without taking a course of training at one of the schools of the Pharmaceutical Society. The length of the course required depends upon the ability of the candidate; a smart fellow can do the work in three months, but, generally speaking, it will be found that six months will be enough for the man of average attainments. The subjects of the Minor or Qualifying Examination are Botany, Chemistry, and Physics, Materia Medica, Pharmacy, Practical Pharmacy and Dispensing, and Prescriptions. The examination—there are four in a year, in January, April, July, October—is taken in two parts, the first portion being devoted to practical work in Chemistry and in Pharmacy. Those who do badly in the practical test are informed that they cannot satisfy the Examiners. Very full details may be obtained on application from the Registrar of the Society, 17, Bloomsbury Square, London, W.C. Valuable information can also be obtained from the *Chemist and Druggist*.

There is a further examination, the Major—taking place twice a year, in April and July—which qualifies for registration as Pharmaceutical Chemists, who are exempt in England and Wales from service on all juries and inquests. The examination fee is three guineas. The subjects are in addition to, and in advance of, those required for the Minor Examination. It may be added that persons who have failed to pass an examination, or

have failed to attend an examination at the time appointed, can re-enter for examination at a reduced rate of fees. There are some valuable scholarships, entitling the winners to a period of free education in the Pharmaceutical Society's School.

PROSPECTS.—The prospects of a young man as a Pharmaceutical Chemist are good, and, since the passing of the Insurance Act, have improved, although it should be noted that the work has become in many centres distinctly heavier. There has also been a change in the nature of the 'business. Prescriptions have largely increased in number and variety, and at the same time there has probably been a decrease in the sales of Patent Medicines. Time will show whether this change will become permanent or not. He will enter the shop of a Chemist and Druggist as Assistant. In a small town his duties will not be heavy; but in larger places, where the making up of doctors' prescriptions will probably be one of his duties, he may have to work late at night and take his turn at Sunday duty. The pay varies from £50 to £100 a year as an indoor Assistant, and from £120 to £160 living out of doors. Some of the abler young Pharmaceutical Chemists, who have distinguished themselves in their examinations, are employed as Assistant Demonstrators in the Society's School, and have an honourable career before them. The post of Dispenser at one of the large hospitals may be considered a prize of the profession. It is worth from £250 to £350 a year. A young Chemist should not start business on his own account without being possessed of sufficient capital. With this condition, success is almost assured to a capable and courteous man.

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II. ANALYTICAL CHEMISTS

The application of Chemistry to the various processes of manufacture has opened up a great field for the energies of the highly trained Chemist. A lad who intends to become an Analytical Chemist should be educated at a school which possesses well-equipped laboratories for Practical Chemistry, and where there is a strong staff of science teachers. After remaining at a good school of this type until he is about eighteen or nineteen, he should proceed to one of the Universities, Colleges, or Institutions recognized for the training of candidates for the Examinations of the Institute of Chemistry.

These include the Universities of Oxford and Cambridge, Leeds, Liverpool, Manchester, Sheffield, Birmingham, Edinburgh, Bristol, Glasgow, St. Andrews, Dublin; the Armstrong College, Newcastle-upon-Tyne; King's College, University College, and the Royal College of Science, London; University College, Nottingham; University College, Aberystwyth; University College, Dundee, etc. He should there make himself practically familiar with the principles of Theoretical Chemistry, and with the principles and practice of Qualitative and Quantitative Analysis, so as to enable him to conduct original investigation, and apply the same to manufacturing or other purposes. He should also apply himself to the study of Physics, Mathematics,* together with Metallurgy, or Geology, and Mineralogy, or Agriculture.

* It should be noted that of late there has been in many ways a much closer connection between Chemistry and Advanced Mathematics, and although a knowledge of the latter may not be essential, nevertheless the Chemistry student who can apply mathematical processes to his chemical theory will have a big advantage over him who cannot.

The course should extend over four years at least. If a man wishes to be a successful Chemist, his earlier training must be systematic, three years being little enough time to spend in laying the foundations of a sound knowledge of the subject. This should be followed by a period spent in research work.

Should the student wish to specialize in any particular branch of Chemistry, he should take care to select an Institution which affords special opportunities for such work. Thus for Chemistry as applied to Dyeing, he might select Leeds University; for Metallurgy, the University of Sheffield, the Armstrong College, Newcastle, and so on.

For the student who wishes to become a Technical Chemist, but who has not yet decided what branch of Chemistry he will ultimately take up, the Heriot-Watt College, Edinburgh, has made an arrangement with the Edinburgh and Leith Corporations Gas Commissioners, by which students who have spent three years in the Day Chemistry Department, and who wish to obtain a thorough knowledge of the analyses of fuels and the products of their combustion, coal gas, and coal distillation products, will be allowed to spend the summer months in the laboratories of the Gasworks at Granton free of charge. Students who have been four years at these classes will be allowed to spend a further period of twelve months in the Gasworks if they are desirous of doing so. Thus they will get a broad, practical training in the processes of Technical Chemistry, in addition to the theoretical training at the College.

The Institute of Chemistry of Great Britain and Ireland, 30, Bloomsbury Square, London, W.C., exists to promote the better education of persons desirous of becoming Public and Technical Analysts and Chemical Advisers on

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scientific subjects; to examine candidates; and to elevate professional Chemistry by setting up a high standard of proficiency, and by insisting on the observance of strict rules for professional conduct. The first grade is the studentship. Every candidate for admission to a studentship is required to produce evidence that he is upwards of seventeen years of age, and has passed a Preliminary Examination in subjects of general education, approved by the Council of the Institute. He must also show that he is working with the object of qualifying himself for the profession of Analytical and Consulting Chemistry. The subjects in which a candidate must have passed are—

(a) English Language; (b) Elementary Mathematics, comprising Arithmetic, Algebra, and Geometry; (c) at least one of the following: Greek, Latin, French, German, Italian, Spanish, any other language approved by the Council.

And, if not more than one language be taken under (c), the candidate must also pass in one of (d) Higher Mathematics, English History, Geography, Botany, Chemistry, Physics, Mechanics, Zoology, Geology.

The candidate must produce satisfactory evidence that he has passed in the compulsory subjects at one examination, but where a candidate can produce satisfactory evidence that he has passed in the compulsory subjects in two examinations—and not more than two—the Council may, if they think fit, exempt him from passing a further Preliminary Examination.

The fee for registration as a student is 5s., and he is required to pay the same amount annually on January 1.

All students are required to present themselves for examination by the Institute within five years of the date of their admission as students.

To become an Associate of the Institute, three examina-

tions must be passed—a Preliminary, the Intermediate, and the Final. The Institute does not conduct a Preliminary Examination, but requires evidence of success in an approved Preliminary Examination* in the above-mentioned subjects, and testimonies of regular attendance at systematic day courses of scientific instruction in Chemistry, Physics, Mathematics, and one other scientific subject, in an Institute recognized by the Council, during at least three academic years. As an alternative to three years' training in an Institute, a candidate may take two years' such training, and work systematically for two other years under the direction of a Fellow of the Institute in a laboratory approved by the Council.† Having satisfied these tests, the candidate is eligible for admission to the **Intermediate Examination** of the Institute. The same privilege is allowed to anyone who has taken a degree in science in any University recognized by the Council, provided that Inorganic and Organic Chemistry and Physics were taken as subjects in the Degree, and that Mathematics were taken in either the Degree or the Intermediate University Examination, and has taken a satisfactory course in one optional subject chosen from—Higher Physics, Mathematics, Mechanics, Steam and General Chemical Engineering, Metallurgy, Geology and Mineralogy, Physiology, Bacteriology, Agriculture, Botany, and Biology. The examination extends over at least four days, and its subject is Theoretical and Practical Chemistry. Success in the Final Examination for the degree of B.Sc. at various Universities under certain conditions exempts from the Intermediate Examination. The next examination qualifying for an

* For details as to the conditions mentioned above, and which are very important, consult the pamphlet issued by the Institute of Chemistry, pp. 16-22 (edition for 1913).

† *Ibid.*

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Associateship is the **Final**. It lasts at least five days, and a candidate is expected to possess, in addition to a general knowledge of all branches of Chemistry, a thorough knowledge of one branch, selected by himself from (*a*) Mineral Chemistry, (*b*) Metallurgic Chemistry, (*c*) Physical Chemistry, (*d*) Organic Chemistry, (*e*) Analysis of Food and of Drugs and of Water, (*f*) Biological Chemistry. Candidates for the Final Examination will be required to translate—with the aid of dictionaries—French and German technical literature into English, to the satisfaction of the Examiners. Any candidate is at liberty to present a thesis or dissertation upon any chemical subject or any original investigation to which he has given special attention, and the Examiners will take it into account in deciding the examination. The thesis must be forwarded not less than fourteen days prior to the first day of examination, and must be accompanied by evidence as to whether the work has been carried out entirely by the candidate or conjointly with his professor or with another student. A candidate who intends to qualify himself for appointment as Public Analyst is recommended to select branch (*e*).

For admission to the Fellowship of the Institute an Associate is required to have been registered three years, and to have been continuously engaged during that period in the study and practical work of Applied Chemistry in a manner satisfactory to the Council. All necessary particulars with regard to the above examinations may be obtained from the Registrar, Institute of Chemistry, 30, Bloomsbury Square, London, W.C.

QUALIFICATIONS.—No lad should endeavour to become an Analytical Chemist unless he has real taste for Practical Chemistry, has some mathematical power, and is

a neat and skilful manipulator. The career needs special gifts and elaborate training. A student, after a training at one of the Institutions mentioned above, should take his B.Sc., and become an Associate of the Institute of Chemistry.

COST OF TRAINING.—If, on leaving school, he goes to Oxford or Cambridge, he will need £140 to £180 per annum for three or four years. If he goes to one of the other Colleges or Institutes which we have mentioned, he will need about £90 per annum for three years. A smart student may reduce this cost considerably by obtaining one or more of the numerous science scholarships that are offered by most Universities and Colleges. Royal Exhibitions of the value of £120 per annum, and tenable for two or three years, are awarded by the Government to able students on the recommendation of certain Universities and Colleges, for the purpose of encouraging research work in Chemistry and other scientific subjects.

These exhibitions enable some of the ablest men to spend a further period in the laboratories of eminent Chemists in Germany or France.

PROSPECTS.—There are openings for really skilled men in certain directions. There are well-paid posts as Borough and County Analysts. The application of the knowledge of Chemistry to all processes connected with metals, with dyeing, with tanning, with brewing, etc., call for the highest skill. In manufacturing firms an Analytical Chemist will be paid about £150 to start with. This stipend will increase according to his value to the firm, and may reach a solid figure. At the same time, it must be recognized that without influence a man usually has to

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work for a long time before he receives a salary at all commensurate with the time and money which must be spent in securing a good training. There is not the demand we should expect for a Business Chemist; consequently, there are numbers of fully qualified and very able men who are willing to work as Assistants for a salary of £150 per annum. As for the scholastic side of the profession, prospects are extremely poor except in a very few cases.

XIII

BANKING

SOME years ago there was hardly any more popular career for a boy than Banking, and in many ways it is still worthy of the consideration of parents. The work is considered respectable and is by no means difficult, and the hours are comparatively short. No premium is required, and there is not necessarily an entrance examination, though many banks, notably the Bank of England, hold a qualifying examination, and some kind of security is usually required on appointment. The young clerk receives payment from the moment he begins work. As private banks are now generally merged into large banking companies, the area of promotion is very much extended, and there are good chances for young men of ability, sterling integrity, and application, and usually a clerk may look forward to a retiring pension. In most banks there is an age limit for entry.

QUALIFICATIONS DESIRABLE.—If a boy is intended for a banking career, he should pay special attention at school to arithmetic and handwriting. He would do well to pass the Oxford or Cambridge Junior Local Examination, taking as two of his subjects French or German and book-keeping. A commercial certificate of an institution like

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the London Chamber of Commerce is found to be a good recommendation. *Ceteris paribus*, a boy who has such credentials has superior chances of success.

HOW TO PROCEED.—The first step to take towards entering a bank is to obtain an application form from the Manager. This must be carefully filled up and returned, together with such certificates as the applicant possesses. If possible, the recommendation of some person well known in the district in which the bank is situated should be secured. The bank authorities must be assured of the ability, good character, and personal respectability of applicants for admission as clerks.

THE INSTITUTE OF BANKERS.—When a boy has secured a position in a bank, he should not be content to look forward to remaining a clerk and nothing more, as is the case with too many bank clerks. He will find it very much to his advantage in after-years to become a member of the Institute of Bankers, which affords facilities for the reading, discussion, and publication of approved papers by members and others, and arranges for lectures on Banking, Mercantile Law, Political Economy, and other kindred subjects. Membership is obtained by election. The Institute holds two examinations, the Preliminary and the Final. The fee for each examination is five shillings. The examinations are held in April, in London and such provincial centres as are convenient to candidates. The subjects of the examinations are as follows :

COMPULSORY.

1. ECONOMICS :

Nature and Scope of Economic Science ; Fundamental Notions : Wealth, Value, Utility, Exchange, Productions, Land, Labour, Capital, Organization, etc. ; General rela-

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tions of Demand, Supply, and Value ; Theory of Distribution : Rent, Interest, Profit, Wages ; Money ; Credit ; Fluctuations and Crises ; Currency and Banking : History and Economic Principles, Bank of England, Money Market, the Clearing House ; International Trade and the Foreign Exchanges ;* Tariffs, Bounties, Free Trade and Protection ; Taxation : Principles and Methods ;* National and Municipal Debts : History and Operation.

2. PRACTICAL BANKING :

Preliminary.—Banking : its Nature and Functions ; Definitions of Banking and Mercantile terms ; Banking Operations.

Final.—The Ordinary Practice of Bankers in regard to Accounts, Bills Discounted, Advances, Deposit of Valuables ; The Bank of England : its Relation to the Banks and the Public ; Banking Investments ; Advances upon Securities ; Exchanges ; Commercial Crises.

3. COMMERCIAL LAW :

Preliminary.—Statute Law relating to Bills of Exchange, Promissory Notes and Cheques, including Stamps thereon.

Final.—General Principles of Commercial Law, including Law of Bankruptcy, Law of Negotiable Instruments, Bonds, Equitable Securities, and Guarantees.

4. COMMERCIAL ARITHMETIC :

Preliminary only.—Vulgar and Decimal Fractions, Involution and Evolution (contracted methods to be known), Proportion, Percentages, Interest (Simple and Compound), Annuities, Discount (Bankers' and True), Trade Discount, Commission, Brokerage, Averaging and Balancing of Accounts, Profit and Loss, Purchase and Sale of Stocks and Shares, Chain Rule—Exchanges and Exchange Operations, Metric Tables.

5. ENGLISH COMPOSITION AND BANKING CORRESPONDENCE. (Candidates are not eligible to enter for this Section until they have passed in Section 4, or Algebra and Arithmetic.)

Final only.—The Laws of Style, including Purity and Perspicuity in the use of words ; Structure of Sentences ;

* Subjects for Final Examination only.

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the Writing of Business Letters;* Business Reports;*
Précis Writing.*

6. BOOKKEEPING :

Preliminary.—Definitions and General Principles.

Final.—Double Entry, Elucidation and Illustration.

VOLUNTARY SUBJECTS.

(Candidates are informed that they cannot take both French and German in the same year.)

1. FRENCH :

Preliminary.—Translation from French into English from *Récits et Nouvelles* (E. About) and of simple passages and letters, some questions on Grammar, the translation into French of easy sentences, and a few elementary questions relating to the French decimal system. Special stress will be laid on a thorough knowledge of French coins, notes, etc., and also their intrinsic, as well as current, value in English money.

Final.—(Candidates are not eligible to enter for this until they have passed the Preliminary Examination in French, and also the five obligatory subjects.) Translations from French into English from (1) *Eugenie Grandet*, by Balzac, and (2) Courcelle-Seneuil's *Les Opérations de Banque*; and also the translation from English into French of unseen paragraphs, of a business letter, and of idioms.

2. GERMAN :

Preliminary.—Translation from German into English (a) *Stille Wasser*, (b) Preisinger's *German Commercial Reader*; translation from English into German of a few easy sentences, German handwriting to be used; questions in German Grammar, which may be answered in German or English handwriting.

Final.—(There is a restriction in this section similar to that in the case of Final French.) Translation from German into English of (a) some unseen passages; (b) *Technik des Bankwesens*, von Dr. Walter Conrad; (c) *Das Handelswesen*,

* Special importance is attached to these acquirements, and relatively high marks will be awarded for proficiency in them. (In marking this Section great importance will be attached to handwriting.)

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von Professor Dr. Wilhelm Lexis. Translation from English into German—(a) A piece of ordinary composition, (b) a business letter. German handwriting in both cases.

A candidate who fails to pass in any of the compulsory subjects may sit again for the subjects in which he has failed; and he may take the Final Examination in the subjects in which he has been successful in the Preliminary, even though he may not have completed the latter examination, subject to the restrictions mentioned in the various sections.

Candidates who have passed the examinations, in Practical Banking, Political Economy, and Commercial Law, held by the Victoria University, Manchester, and certain examinations in these subjects held by the University, Birmingham, are excused the Preliminary Examination in those subjects. Candidates who pass an examination which exempts them from any subject in the Preliminary Examination may not proceed to the Final Examination in that subject within a year of such exemption.

Honour Certificates are awarded in the Final Examination in the following subjects: Economics, Practical Banking, Commercial Law, English Composition, and Banking Correspondence. As soon as this examination is passed the candidate may be elected an Associate of the Institute of Bankers. Particulars may be obtained from the Secretary of the Institute, 34, Clement's Lane, London, E.C.

PROSPECTS.—A young man who has gained the certificates of the Institute, and has approved himself by his industry and complete trustworthiness, has a good prospect open to him. At the age of twenty-one years he is in receipt of probably £70 or £80 a year. In a few more years he may

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be appointed to the management of a small branch of the local business, and have the assistance of a junior clerk. Promotion is certain in the course of years. As we have said, the area of promotion is now more extended. There is hardly any pleasanter occupation than that of Manager of an important branch of a banking company. The salary is good—from £250 to £800—often, at head offices, much more, with, in many cases, a residence. The post of Inspector carries a liberal payment. Many banking companies place restrictions upon their clerks marrying; in some cases, clerks are not permitted to marry before they are in receipt of £150 a year.

The best prospects are offered by the Bank of England. Here the commencing salary is £100 per annum, rising by annual increments to £400, and to the more highly-paid posts by selection. The age limits for entry are from eighteen to twenty-two. The nomination of a Director is required, for which there is usually a long list of applicants.

Except in the case of our greater banks, the banks of our Eastern Possessions and of the Colonies offer better prospects than those in the United Kingdom. In the Chartered Bank of India, Australia, and China; The National Bank of India, Ltd.; The Hong Kong and Shanghai Corporation; The Delhi and London Bank, etc., the commencing salary is £80—£100, and the higher posts are well paid.

Some of the rapidly advancing Colonies, such as Canada, present specially good prospects of advancement. In some of the Canadian banks the staff is almost entirely recruited from the ranks of our own Public School boys, who start at £50 a year and rooms, and in a few years, if found capable, receive upwards of £200 a year.

An important bank in South America is ready to receive

boys of seventeen to eighteen years of age, of good education and parentage. They offer their clerks a commencing salary of £50 per annum, with an annual increase dependent upon work and ability. After from three or four years' training at the Head Offices of the Bank in London, they are sent abroad to one or other of its branches, as vacancies occur, on a five years' agreement with a present commencing salary of £300 per annum, with passage, allowance for outfit £50, and voyage allowance £10; at the end of that period they have six months' leave on full pay, and return to South America on such terms as may then be arranged.

Candidates are required to pass a qualifying examination in Arithmetic, Dictation, and French.

XIV

CHARTERED ACCOUNTANTS AND ACTUARIES

I. CHARTERED ACCOUNTANTS

THE profession of Chartered Accountant is one that offers excellent prospects, and can be entered at a comparatively small cost. Articles must be entered into with a member of the Institute of Chartered Accountants in practice in England or Wales, and having been stamped with a two-and-sixpenny stamp, must be registered at the offices of the Institute within one month of their execution. There will be a premium to pay, varying with the standing of the firm to which a youth is articulated. It may range from one hundred to several hundred pounds. A small salary is often paid either throughout the whole time or during the latter part of the term. It is not unusual for about half the premium to be paid as salary during the last two years. In deciding on a principal it is better to choose an office in a large commercial city rather than in a small provincial town. No person can be articulated under sixteen years of age, and the term of service is five years, except in the case of graduates of a University of the United Kingdom, who are required to serve three years.

Among men of business the diploma of Chartered

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Accountant is recognized as an indication of actual business knowledge.

NECESSARY EXAMINATIONS.—Before the articles can be taken up, it is necessary to pass the Preliminary Examination of the Institute of Chartered Accountants, unless exemption is allowed.

The following conditions should be observed :

1. No articked clerk shall, during his term of service, engage in any other business or occupation.
2. He cannot enter into partnership or go into business as an Accountant during his term of service. His doing so would at once terminate his articles.

THE PRELIMINARY EXAMINATION is held in the months of June and December, in London, and at one or more of the following towns: Birmingham, Manchester, and Newcastle-upon-Tyne. Candidates are informed, a week before the examination, in what provincial towns the examination will be held. Exemption from the Preliminary Examination is allowed on payment of a fee of one guinea to graduates of any University in the United Kingdom, or to those who have passed one of the following examinations :

1. The Responsions Examination at Oxford.
2. The Previous Examination at Cambridge.
3. The Moderations Examination at Oxford.
4. The General Examination at Cambridge.
5. The Matriculation Examinations of Birmingham, Bristol, Durham, London, Wales, or the Joint Matriculation Board of Manchester, Liverpool, Leeds, and Sheffield.
6. The Oxford or Cambridge Senior Local Examination.
7. The Higher Certificate Examination of the Oxford and Cambridge Schools Examination Board.
8. The Senior or Honours Certificate Examinations of the Central Welsh Board.

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9. The examination by the Civil Service Commissioners for First Class Clerkships in the Home Civil Service and for the Indian Civil Service, and the further examination for admission into the Royal Military Colleges at Sandhurst and Woolwich.

Until December 31, 1915, all persons who between January 1, 1905, and December 31, 1910, have passed any examinations which under the then existing by-laws of the Institute would have entitled them to exemption from the Preliminary Examination, will be entitled to such exemption.

In the case of the examinations referred to in 1, 2, 5, 6, 7, 8, 9, candidates must pass in the subjects of the Preliminary Examination of the Institute. Such candidates who thus seek exemption, but who have not passed in all the subjects required, may, in some cases, be examined in such subjects by these exempting bodies on giving due notice. The subjects of the Preliminary Examination of the Institute are as follows :

1. **COMPULSORY.**—Writing from Dictation, English Composition, Arithmetic, Algebra to Quadratic Equations (inclusive), the first four books of Euclid or its equivalent, Geography of British Islands and the Cape to Cairo Route, English History from 55 B.C. to the present time.

2. **OPTIONAL.**—Two subjects (one of which, at least, must be a language) may be selected from the following :

Latin, Greek, French, German, Italian, Spanish : The examination consists of the translation of easy passages from these languages into English, and from English into these languages, and questions in Grammar.

Higher Mathematics : Algebra, Trigonometry, first six books of Euclid or its equivalent.

Physics : Elementary Mechanics, Hydrostatics, and Pneumatics.

Chemistry : The principal elements and their more important inorganic compounds, and some Organic Chemistry.

Biology.

Geology.

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Shorthand : The examination consists of dictation at seventy words a minute, and transcription by the candidates of their notes. Any recognized system is accepted.

A list of books recommended is issued, and may be obtained from the Secretary.

Forms of application must be returned to the offices of the Institute, Moorgate Place, E.C., accompanied by the examination fee of two guineas, not later than thirty days before the date of the examination.

The student would do well to join as early as possible one of the Chartered Accountants Students' Societies. They hold lectures and discussions, and provide a library from which text-books may be borrowed. Societies exist in a number of the larger towns. Information of them may be had from the respective Secretaries, a list of whose addresses is given in the Institute's Year-Book.

INTERMEDIATE AND FINAL.—As soon as an articled clerk has served two years and a half (in the case of graduates, one year and a half), he may take his Intermediate Examination. It is held in London in May and November, and the subjects are strictly professional. At the conclusion of his term of service, he may sit for his Final Examination. It is held in London towards the end of May and November, and the subjects are entirely professional.

The fee for each of the three examinations is two guineas.

The fee on admission as an Associate is ten guineas, and a similar amount is payable on admission as a Fellow.

The Society of Incorporated Accountants and Auditors also hold examinations in May or June, and November or December. The centres are London, Manchester,

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Glasgow, Dublin, and Belfast. There are three examinations—the Preliminary, the Intermediate, and the Final; and the fees are a guinea, a guinea and a half, and two guineas respectively. The Preliminary Examination is intended to test the general education of candidates, and includes the following subjects:

Arithmetic.

English Grammar and Composition.

English History from 1066 to 1900.

Geography of the British Empire, Colonies, and Dependencies, and general Topography.

One of the following languages: French, German, Elementary Latin, including (a) Grammar, (b) Unseen translation into English, (c) Easy translation from English.

Algebra as far as Quadratic Equations and Graphs.

Elementary Geometry: Rectilineal figures, areas, and circles.

To obtain exemption from this examination, a candidate must have passed an equivalent examination, by an approved examining body, in all the above subjects. The subjects for the Intermediate and Final Examinations, which are held about the same time as the Preliminary, are professional.

For details regarding syllabuses of subjects and eligibility, application should be made to the Secretary, 50, Gresham Street, London, E.C.

Attention may also be called to the London Association of Accountants, which consists of Members, Associates, and Fellows. After admission as an Associate, there is an Intermediate and a Final Examination in professional subjects. These examinations are held in June and December in each year. Further information may be obtained from the Secretary, Henry A. G. Lewis, Esq., Temple Chambers, Temple Avenue, London, E.C.

The procedure in Scotland is somewhat similar, exami-

nations being held by the Edinburgh, Glasgow, and Aberdeen Societies, but a special Preliminary Examination is not now held. At present a person desirous of entering into an Indenture of Apprenticeship with a Chartered Accountant of Scotland shall, before commencing his apprenticeship, or within six months thereafter, pass the examinations in English, in one other language, and in Mathematics, set as part of the Preliminary Examination for Graduation in Arts at the Scottish Universities, the lower standard in Latin or Greek and in Mathematics being accepted.

Persons who have passed one of the following examinations shall be entitled to exemption from the above examination :

1. The Examination for a Leaving or an Intermediate Certificate of the Scotch Education Department, provided that Mathematics, English (including History and Geography), and one other language are endorsed on the certificate.

2. Higher or Lower Grade passes at the Intermediate or Leaving Certificate Examination of the Scotch Education Department in Mathematics, English, History, Geography, and one other language, provided that in the case of the Lower Grade passes all these subjects have been taken at one examination.

3. The Junior or Senior Local Examinations conducted by the Universities of Oxford and Cambridge, provided the Certificate includes Arithmetic, Mathematics, English (including History and Geography), and one other language, ancient or modern, and provided that in the case of the Junior Examination all these subjects have been taken at one examination.

4. The examinations of the Oxford and Cambridge

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Schools Examination Board, covering Mathematics, English, English History, and Geography, and one other language.

5. The Responsions Examination at Oxford, provided the candidate pass the examination of the Joint Board in English.

6. The Previous Examination at Cambridge.

7. Any examination accepted by the Scottish Universities as entitling to exemption from the Preliminary Examination for Graduation in Arts in the subjects of Mathematics, English, and one other language.

The apprentice fee varies from fifty to one hundred guineas. There is also a compulsory assurance fund.

Details can be obtained on application to the Secretary, 190, West George Street, Glasgow.

The Intermediate Examination must be passed at some time during the last three years of service, and may be taken after not less than one year has been served.

The subjects are Arithmetic (including Interest and Discount), Algebra (including Progressions, Annuities, and Logarithms), Book-keeping, Accounts, and Correspondence and Précis Writing.

The Final Examination is open to those who have completed their apprenticeship, and have attended certain Law Classes at one of the Universities or such extramural classes as may be prescribed.

The subjects of examination are strictly professional.

In Ireland there is a Preliminary Examination in the following subjects: English, Dictation, and Composition; Arithmetic, Algebra, Geometry; English History and Geography; Latin; and two of the following (one to be a language): Irish, French, German, Italian, Spanish;

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Chemistry; Electricity and Magnetism; Light and Heat; Higher Mathematics; Shorthand. Fee, one guinea.

There are the usual exemptions to this examination. The Intermediate and Final Examinations—the fee for each is two guineas—deal chiefly with professional subjects.

For conditions, etc., it would be well to apply to the Secretary of the Institute of Chartered Accountants in Ireland, 4, College Green, Dublin.

PROSPECTS.—The prospects in the profession of an Accountant are highly favourable. Accountants are in request as Secretaries to Building Societies, Savings Banks, etc., and almost all large business firms now employ professional auditors, at a liberal rate of remuneration. As some indication of the scale of fees received for professional work, we may quote the fees assigned to Accountants under the Bankruptcy Acts. For preparing balance sheets, investigating accounts, etc., principal's time, exclusively so employed, per day of seven hours, including necessary affidavit, £1 1s. to £5 5s.; chief clerk's time, 10s. 6d. to £1 11s. 6d.; other clerks' time, for a day of seven hours, 7s. 6d. to 16s. An Accountant and Auditor with a fair amount of business is certain of a comfortable income; those who are in the front rank of the profession earn very large incomes and employ large staffs. Their chief clerks may receive from £200 a year upwards; the junior clerks in proportion. In some offices, clerks are paid according to the amount of work they do, and an industrious clerk can make a very fair income.

Recent legislation has opened out wide prospects of lucrative employment under the National Health Insurance Commission.

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II. ACTUARIES

An Actuary is defined in the Oxford English Dictionary as "An official in an insurance office, whose duty it is to compile statistical tables of mortality, and estimate therefrom the necessary rates of premium, etc.; or, one whose profession it is to solve for Insurance Companies or the public all monetary questions that involve a consideration of the separate or combined effect of Interest and Probability, in connection with the duration of human life, the average proportion of losses due to fire or other accident, etc." It is evident that work of such a kind demands skill and accuracy in the manipulation of figures. A youth, therefore, who wishes to become an Actuary should pay special attention to Arithmetic, more especially to Percentages, Simple and Compound Interest, Present Worth and Discount, and Stocks; and he should give close attention to Algebra. It would be well if one of the qualifying examinations named below were passed before leaving school. Too much stress cannot be laid upon the cultivation of distinct and rapid handwriting. It is most important, and should have special care given to it. The advantage of this profession is that no capital is required, nor is the prospective Actuary required to serve articles. The whole cost of professional education, fees, etc., is extremely low, probably not exceeding £30.

EXAMINATIONS.—The youth should obtain a post in the head office of some Insurance Company, and then seek to become a member of the Institute of Actuaries. The Institute has established a Class of Probationers, who, while not being members of the Institute, are entitled to join the Classes for Students and attend the ordinary

general meetings, but they can take no part in the discussions or voting. They may also, subject to the discretion of the librarian, borrow books from the library for study. There is an entrance-fee of half a guinea, and an annual subscription of the same amount. Application for probationship should be made on the prescribed form, which may be obtained of the Secretary.

Applicants for admission to the First Examination of the Institute must, unless they are already probationers, have passed one of the following examinations :—

(a) The Matriculation Examination of the University of London, either as the ordinary Matriculation Examination or as the School Examination (Matriculation Standard) for the School-leaving Certificate.

(b) Any examination of a similar nature at any University in the British Empire.

(c) The Oxford or Cambridge Senior Local Examination.

(d) Any other examination that may be included in a list approved by the Council from time to time, or be accepted on individual application.

The Institute holds lectures in preparation for the first examination, the course extending from October to April. The examination is held annually in April, one month's notice being given of the dates and places of the examinations. The First Examination is of candidates for admission to the class of Student of the Institute. The subjects are—

1. Arithmetic and Algebra ; the Theory and Use of Logarithms ; the Elements of the Theory of Probabilities.

2. The elements of the Calculus of Finite Differences, including Interpolation and Summation ; Elementary Differential and Integral Calculus, excluding questions needing the use of Trigonometry.

3. Compound Interest and Annuities-Certain, including the construction and use of relative Tables.

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It may be remarked that the standard for a pass in this examination is high, and in most cases special preparation will be required by the candidate.

A candidate passing this examination may be admitted as a Student of the Institute. There is a subsequent examination for Associates and two others for Fellows of the Institute; but the details given above are sufficient to show in what direction a youth, intended for the profession of Actuary, should turn his studies. There is an examination fee of one guinea for each of these examinations. Full details can be obtained from the Secretary, Institute of Actuaries, Staple Inn Hall, Holborn, W.C.

In Scotland admission as a Student of the Faculty of Actuaries may be obtained on the recommendation of two Fellows of the Faculty. Within three years of admission the student is expected to present himself for the First Examination, which is held annually in April.

The subjects of examination include Arithmetic; Algebra—Equations, Series, Permutations and Combinations, Binomial Theorem, Logarithms; the Elements of the Calculus of Finite Differences and the Theory of Probabilities.

Thereafter there are two further examinations in professional subjects, which should be taken at intervals of not more than three years.

Graduates of any University of the United Kingdom may be exempted from the First Examination if they have taken Mathematics as one of the special subjects in which they have graduated.

Further particulars may be obtained from the Secretary, 14, Queen Street, Edinburgh.

PROSPECTS.—To get an introduction into a good Insurance Office usually requires some personal recom-

mentation or influence. A candidate will probably have to go before the Manager, who will be able to learn more of his capabilities and fitness from a few minutes' conversation than from much correspondence. The most important recommendations for a post in a good Insurance Company are a thoroughly good general education, nice manners and appearance, intelligence, and smartness. If a youth is admitted, he serves an apprenticeship of five years, and receives during that time from £80 to £150. These five years should be invaluable to him. He can make himself familiar with all the details of insurance business, and his future depends wholly on his own industry and perseverance. When his term of five years is completed, he may become a clerk. He will begin at £60 or £70 a year, and rise to £250 or £300. If promoted to an Inspectorship, he may receive £250 or £300 a year and commission. A reputation for exceptional ability in Calculation and Mathematics may bring him to the post of Actuary, which will be worth from £500 to £700 or £800 a year. These well-paid posts may be regarded as the prizes of the profession, but they are attainable by an official who has begun as an ordinary clerk, and has worked his way up by industry, energy, and good business ability. Probably the best-paid branch of insurance business is Fire Insurance, which is said to offer exceptional advantages to one who proves himself trustworthy, industrious, and of good business capacity. In a large Marine Insurance Company, like Lloyd's, an Underwriter may receive £2,000 a year, and the Managers of the leading Insurance Companies receive incomes that are larger even than this. Speaking generally, there are few openings "in the city" that offer greater opportunities to the really clever man than those offered by Insurance Companies.

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One of the recent Presidents of the Institute of Actuaries, in his presidential address, made the following interesting statement: "He thought that the great Government Departments would require to have Actuaries permanently attached to them. The profession was not so overcrowded as Law and Medicine, and though through amalgamations the number of Companies had decreased, the business was greater than ever, and probably would further expand, so that more actuarial assistance would be required. He recommended only young men of good education and fair mathematical knowledge to undertake the long course of study required to pass the examinations for Fellowship."

XV

LAND AGENTS AND SURVEYORS

COURSE OF TRAINING.—It is very desirable that a youth intended for the profession of Land Agent or Surveyor should have a good general education, remaining at school long enough to pass either the Oxford or Cambridge University Senior Local Examination. If this is not practicable, he should attempt the Preliminary Examination of the Surveyors' Institution, the objects of which are—(1.) To secure the advancement and facilitate the acquisition of that knowledge which constitutes the profession of a Surveyor; and (2.) to promote the general interests of the profession, and to maintain and extend its usefulness for the public advantage.

The subjects of the Preliminary Examination are—Arithmetic; Elementary Algebra (up to and including Quadratic Equations); English History (from the Norman Conquest to the present day); Composition and Writing from Dictation; Euclid—the first three books *or* Theoretical and Practical Geometry; and Elementary Latin, *or* French, *or* German.

The examination is held annually in January—in London, Manchester, Glasgow, and Dublin. Entries, accompanied by a fee of one guinea, must be forwarded to

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the Secretary not later than the end of the month of September preceding.

Among the examinations exempting from the Preliminary are the following :

1. The Matriculation Examination of any University in the United Kingdom.
2. The Oxford and Cambridge Senior Locals.
3. The Oxford and Cambridge Junior Locals (Honours).
4. The Higher or Leaving Certificate Examination of the Oxford and Cambridge Schools' Examination Board.
5. The Senior or Honours Certificate of the Central Welsh Board.

Three courses are open to the youth who desires to qualify for the profession of Surveyor. He may become—

1. An apprentice in a Land Agent's or Surveyor's Office; *or*
2. A student in an Agricultural College; *or*
3. He may take a University College Course.

I. AN APPRENTICE TO A LAND AGENT OR SURVEYOR is usually required to pay a premium, the amount of which varies in different localities. The period of articles for surveying is three years. The apprentice will be expected to do ordinary office work, making himself acquainted as well as he can with the details of land agency or estate management. There are now many opportunities of acquiring this knowledge, as it is becoming usual to place the management of estates in the hands of professional land agents. An apprentice has therefore an opportunity of learning a good deal about estate management, local land customs, leases, the duties

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of landlord and tenant, and so on. In many offices, particularly provincial offices, the profession of Surveyor is united to that of Land Agent. The apprentice may thus learn the details of Surveying. Meanwhile, as opportunity offers, he should prepare himself for his future examinations. His office duties will, doubtless, interfere with this to some extent ; but still there are many opportunities for continuing his studies, and they should not be neglected. He should give attention to mathematical subjects, especially Trigonometry. At the conclusion of his apprenticeship, if he has been ordinarily diligent, he will have gained a good practical knowledge of Land Agency, Estate Management, and Surveying.

II. THE SECOND COURSE open to a youth on leaving school is to enter as a student at an Agricultural College. There are several such Colleges in the kingdom—Aspatria, near Carlisle ; the Royal College at Cirencester ; the Harper Adams College at Newport, Salop ; the College at Wye, Kent ; the College of Agriculture, Holmes Chapel, Cheshire ; and the Uckfield Agricultural College, under the East Sussex County Council. The chief Scotch College is the West of Scotland Agricultural College at Glasgow. We may take the first two—Aspatria and Cirencester—as typical. At neither is there an entrance examination ; the best preparation for the course of study is a good general education. At Aspatria the fees are 33 guineas a term. There are three terms in the year. The course of study embraces theoretical and practical work, and there is careful preparation for the examinations of the Surveyors' Institute and of the Royal Agricultural Society. Scholarships and other prizes are offered which materially reduce the cost of the education. The fees at

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the Royal Agricultural College at Cirencester are as follows: For "In-students" £45 a term; laundress £2 2s. a term; private rooms 10 guineas a term. This means an annual cost of nearly £172. "Out-students" pay an entrance fee of £5, and their term's fee is £25. This includes the use of chemical apparatus, and all College charges except books, fines, and damages. At Cirencester also there are valuable scholarships to be gained. In all the Agricultural Colleges theory and practice go together, and special attention is paid to the details of Estate Management and to Forestry. This may be commended to the notice of intending candidates for the Indian Forest Department.

III. THE THIRD COURSE is that of a University College. In some of the Universities special facilities are provided for the study of Agriculture. This is the case at Oxford and Cambridge, at the Armstrong College, Newcastle-upon-Tyne, and at the University, Leeds. The subject is also taught at Reading University College, at the University Colleges of Bangor, and Aberystwyth, and at the University of Edinburgh. Proficiency in the subject is recognized at some of these institutions by a Diploma of Agriculture, the examination for which, however, is quite open.*

The Council of the Surveyors' Institution have established scholarships tenable for three years at the Universities of Oxford and Cambridge of the value of £80 per annum, and others of the value of £60 and £50 tenable for a similar period at other Universities in Great Britain.

* The Universities of Great Britain and Ireland and their affiliated Colleges; the Aspatria Agricultural College; the Agricultural College, Uckfield; the Harper Adams Agricultural College, Newport; Hartley University College, Southampton; and Reading University College are recognized places of instruction.

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The subjects of examination are—(a) Elementary Chemistry and Physics; these two subjects must be taken by all candidates. (b) More advanced Chemistry, Physics, Botany, and Geology; two only of these advanced subjects may be taken.

Candidates must make a declaration that it is their intention to become articled to a member of the Surveyors' Institution. Applications should be forwarded before June 30 to A. Goddard, Esq., Surveyors' Institution, 12, Great George Street, Westminster, S.W.

It is almost essential to future success that a young Land Agent or Surveyor should possess the certificate of the Surveyors' Institution. The Agricultural Colleges, as we have said, make special preparation for the examinations. Candidates for the Preliminary Examinations must be not less than sixteen years of age, and (1) be or about to be pupils of Surveyors, or (2) be studying with a view to entering the profession at such places of professional instruction as the Council of the Institute may approve. The subjects of the examination have been given above. On attaining the age of eighteen, those who have passed the Preliminary Examination or its equivalent may be enrolled as students. The Surveyors' Institution holds also three professional examinations: (1) An Intermediate, which may be taken at the age of nineteen. (2) A Final Examination whereby the status of Professional Associate-ship may be attained: this examination may now be taken at the age of twenty-one. (3) The Direct Fellowship Examination, by which non-members may qualify for the class of Fellows. Candidates successful in the necessary examinations have to satisfy certain conditions before they are eligible for transfer to the Class of Fellows. These Professional Examinations offer considerable choice to a

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candidate, and it would be well for an intending Surveyor to consider early what branch of surveying he intends to specialize in. He may enter for Land Agency, or Valuation, or with a view to becoming a Quantity Surveyor or a Building Surveyor. Details of the subjects of all the examinations may be obtained from the Surveyors' Institution, 12, Great George Street, Westminster, S.W.

PROSPECTS.—A young man who has been successful in these examinations has the highest recommendation for employment. If he has not the advantage of belonging to a family in the profession and at once entering the family office, he should, if possible, seek employment with some reputable firm as assistant. It is hardly advisable to begin business on his own account at once, unless, of course, he has a promising opening. A few years' service with a good firm affords excellent training. The remuneration varies with localities, but is seldom under £100 a year as commencing salary. There is always a demand for Assistant Surveyors in connection with railways, harbour construction, and similar works, and the salaries are fairly liberal. The post of Borough Surveyor is valuable. Even in a small town a Borough Surveyor seldom receives less than £250 a year; and in larger towns he receives considerably more, £400 to £800. In some offices a Quantity Surveyor is paid according to the amount of his work. A Building Surveyor receives good remuneration, and the services of officials of this class are likely to be in increasing demand in these days of extended Municipal Government. There are also important Government posts open to Surveyors and Land Agents, both at home and in the Colonies, with salaries ranging from £125 to £1,000 per annum, followed by pensions on retirement on the

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usual Civil Service Scale. Since the passing of the Finance Bill a very large number of Surveyors are being employed by the Government at salaries varying from £150 to £1,200 per annum. There has also been a great increase of work for local Surveyors in private practice on behalf of their clients. Land Agency is likely to be more and more remunerative. It is becoming usual, as we have said, to place the management of estates in professional hands, and the Land Agent in this way adds considerably to his professional income. The ideal employment of this character is the office of Steward of a large estate. The Steward has usually a pleasant house and excellent surroundings, with an income sufficient to maintain his position. He lives, in fact, the life of a country gentleman with his hands always full of interesting work, which gives him a unique position and authority in the district in which he lives.

Recent legislation and impending legislation make it inevitable that the profession of Land Agent and Surveyor will be more important in the future than in the past. An immense amount of work has been thrown upon the profession lately, and men of repute have been in urgent demand for valuation of estates and arbitration purposes, and we have been told by one of the leading men in the South of England that the next few years will offer wide and varied opportunity to strenuous and able men.

XVI

AUCTIONEERS

QUALIFICATIONS.—The profession of Auctioneer has of late years become popular, and its status has considerably improved. It has many advantages, and its duties are multifarious and often interesting. A successful Auctioneer is a man of sound judgment, sterling honesty, wide experience, ready-witted, resourceful, and a good judge of men. With his business as Auctioneer he often combines Valuation, Fire and Life Assurance, Shipping Agency, Land and House Agency, the Collection of Accounts, Broker's Business, Secretarial and Accountant's work. It is evident, therefore, that a youth intended for the profession should have all his wits about him, and be possessed of a good general education, with considerable skill in arithmetic. He should be encouraged to use as much of his spare time as possible in wide and miscellaneous reading. The Auctioneers' Institute of the United Kingdom has for one of its objects the better definition and protection of the profession by a system of examinations, and the issue of certificates on the results of such examinations. It must be understood that these certificates are in no way necessary, but they are extremely useful, and are doing much to raise the status of the profession. A youth who in-

tends to become an Auctioneer would do well, therefore, to enter for the examinations.

EXAMINATIONS.—The first examination is the Preliminary, which qualifies for the grade of studentship of the Institute. No person shall be eligible for election as a student unless he can show to the satisfaction of the Council that he has passed the Preliminary Examination of the Institute, or has been declared by the Council to be exempt from passing the Preliminary Examination, and is in either case at the date of his application for election serving, or intending to serve, as articled pupil or clerk to an Auctioneer, or Estate Agent, or Valuer, or a firm of Auctioneers, or Estate Agents or Valuers, or is studying with a view to serving as such at some place of professional instruction approved by the Council, and has attained the age of sixteen years.

On attaining the age of twenty-five years, students cease to be members.

It is held in London annually in March or April. The fee is one guinea, and the subjects are—

1. **COMPULSORY.**—Writing from Dictation; an English Essay; Elementary Bookkeeping; Mathematics, including Arithmetic, Mensuration of Plane Surfaces, Elementary Algebra, Geometry, and the first two books of Euclid; Geography of Great Britain and Ireland; History of England from the Norman Conquest, with the Nineteenth Century as a special period.

2. **OPTIONAL.**—Two of the following subjects must be taken: Shorthand; Elementary Latin; French; German; General Intelligence (questions upon current events and general topics).

Among the examinations exempting from the Preliminary are the Oxford and Cambridge Senior Locals, the First Class Certificate of the College of Preceptors, the Certificate of the Oxford and Cambridge Schools'

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Examination Board, the Commercial Certificate of the London Chamber of Commerce, and the degree or the matriculation of any University of the United Kingdom. Subsequent examinations admit to the grades of Associate and Fellow of the Institute.

The Intermediate or Associateship Examination is open to candidates who are not less than nineteen years of age, and are either students of the Institute, or articled clerks of at least three years' service, or, not being articled clerks, have been employed for at least five years in the office of an Auctioneer, Estate Agent, or Valuer, or are in public practice as Auctioneers, or Estate Agents or Valuers, either alone or in co-partnership, or have been, for at least three consecutive years immediately preceding the date of entry for examination, managers or principal clerks to Auctioneers, or Estate Agents, or are Auctioneers, or Estate Agents, or Valuers in the employ of the Government, or of a Corporation or Public Body. The subjects of examination are—Book-keeping, Mensuration, the use of Valuation Tables, the Law of Landlord and Tenant, together with Land Surveying, or Measurement and Valuation of Dilapidations, or Estate Accounts. The examination fee is two guineas. The Final or Fellowship Examination is open to Associates by examination, but no one who has passed the Final will be eligible to apply to the Council for admission as a Fellow until he has attained the age of twenty-five years, and is in practice on his own account, or as partner in a firm as an Auctioneer, or Estate Agent, or Valuer. The examination fee is three guineas. The subjects are professional.

In addition to the foregoing, there is also what is termed the Direct Final Fellowship Examination, the

subjects of which are identical with those for the ordinary Fellowship Examination, with the addition of Book-keeping and Law of Landlord and Tenant, and as an optional subject, Estate Accounts.

This examination is open to any person who has attained the age of twenty-one, but no one who has succeeded in passing shall be eligible to apply for admission as a Fellow until he is twenty-five, and for at least three years has been in practice on his own account, or as a partner in a firm, as an Auctioneer, or Estate Agent or Valuer. The examination fee is four guineas.

Full details of all the examinations may be obtained from the Secretary of the Institute, 34, Russell Square, London, W.C.

HOW TO BEGIN.—A boy may enter an Auctioneer's office as an ordinary clerk, in which case his upward progress will be slow, and his prospects uninviting, or he may enter as an articled clerk. In this case, a premium will be required, varying from 100 to 300 guineas. The boy's future success will depend upon his industry and insight. He will have to keep his eyes open, and gain acquaintance with the details of the business transacted in his office. If he should decide to combine with this daily experience a course of study, such as that mapped out in the higher examinations of the Auctioneers' Institute, he would be admirably equipped for beginning business on his own account.

PROSPECTS.—The success of a young Auctioneer depends, to a considerable extent, upon his skill in detecting and advertising the strong points in what he has to sell, his readiness of speech, his quickness in observing and making use of the incidents of a sale, and, above all, in

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his absolute trustworthiness. With such qualities he is certain of clients. The bulk of the best sales are put into the hands of solicitors, and when solicitors meet with an Auctioneer of the kind we have described, it is to their interest to employ him. A young Auctioneer must be careful to comply with the conditions under which he can exercise his calling. He pays £10 a year for his licence ; but he can act as Appraiser or House Agent without further licence. Where goods are carried about for sale from place to place, a Hawker's licence of £2 a year is required. The commission for sales varies with the class of articles sold, and may be fixed by previous arrangement. The selling by auction of landed property is generally remunerative. Particulars are given below. Auctioneers are supposed to be able to add to their income by "buying in" things of value, and disposing of them afterwards on terms advantageous to themselves. In large centres of population, Auctioneers are in the habit of specializing. Thus, one Auctioneer or firm becomes known in connection with pictures, another with books, another with articles of historical value or rarity, another with the sale of large estates, another with house property, another with the property of licensed victuallers, another with the sale of cattle and horses, and so forth. But the Auctioneer in country towns and villages finds employment of a miscellaneous kind ; he may be described as a general practitioner, not a specialist. An Auctioneer's fees for the sale of freehold and copyhold estates and houses and ground leases are 5 per cent. on the first £100 ; $2\frac{1}{2}$ per cent. up to £5,000 ; and on the residue above that sum $1\frac{1}{2}$ per cent. There is also the usual commission of 5 per cent. on the amount paid for fixtures, furniture, and effects, up to £500, and $2\frac{1}{2}$ per cent. on the residue.

Valuation of property, furniture, etc., for probate or administration is paid at the rate of $2\frac{1}{2}$ per cent. for the first £100, and $1\frac{1}{2}$ per cent. on the residue; for purposes of sale, purchase, or mortgage, 1 per cent. up to £1,000, and 5s. per cent. above, on the full value of the valuation. Under the Bankruptcy Acts of 1883 and 1890, the allowances for Auctioneers run thus:

For sale by Private Contract for Inventory and Valuation—on the first £100, £1 5s. per cent.; for the next £400, 12s. 6d.; above £400 up to £10,000, 10s.; above £10,000, 5s.

For Sales by Auction (in addition to certain out-of-pocket expenses) of Chattel Property, 5 per cent. on the first £500; 4 per cent. on the next £500; above £1,000, $2\frac{1}{2}$ per cent.

For Sale of Estates in Land, including prior valuations for determining the amount of reserve bids, 5 per cent. on the first £300; on the next £1,600, $2\frac{1}{2}$ per cent.; $1\frac{1}{4}$ per cent. up to £5,000; and above £5,000, 1 per cent.

These fees are for the peculiarly auctioneering work; but when an Auctioneer combines with such work the duties of Broker, House Agent, Debt Collector, and so on, he has the chance of earning a larger income; and his emoluments are likely to increase with years as he gets more widely known in his locality.

XVII

ARCHITECTS

QUALIFICATIONS.—A boy should not think of becoming an Architect unless he has a decided taste for drawing in all its branches. Given this taste, he should avail himself of every opportunity of developing it. Art Schools, recognized by the Board of Education, and staffed by qualified teachers, afford the best means of instruction and improvement. The best plan is to follow the course of instruction laid down by the Board, laying special stress on Freehand Drawing, Geometrical Drawing, and Perspective. Building Construction is also a most important subject. If a boy attends a Secondary School, he should prepare for one of the University Local Examinations. If he passed the Senior Examination or the Junior in Honours he would afterwards save considerable time, which he could devote to his more strictly professional studies.

TRAINING.—A youth may enter an Architect's office as an Articled Clerk, an Assistant, or an "Improver." The first course should, if possible, be selected. In almost all offices a premium is required, varying from £50 to 300 guineas, according to local custom or the professional standing of a firm. The term of service may be four or five years, during which, as a rule, no salary is paid. The

expenses, then, that the parent has to face at the outset are a premium, the cost of maintaining and clothing his son for four or five years, and the necessary outlay on the requirements of his profession, instruments, etc. Although there is nothing to prevent a young man beginning business as an Architect on his own account as soon as he completes his apprenticeship, he would be well advised to spend some time as an Assistant in a good office and extend his architectural knowledge, and, if possible, gain an insight into quantity surveying. The examinations held by the Royal Institute of British Architects and some of the Non-Metropolitan Societies allied thereto, are now of recognized value in the profession; and as a rule young men who hold the certificates of the Institute have a superior chance of success. There are three examinations—the Preliminary, the Intermediate, and the Final. The Preliminary Examinations are held twice a year, in the months of June and November. The fee for the examination is two guineas. The subjects are as follows:

1. Short English Composition. Simple subjects to test the candidate's power of observation and description.

2. Writing from Dictation. Clear and well-formed writing, with accurate spelling and correct punctuation, should be aimed at.

3. Arithmetic, Algebra, and Elements of Plane Geometry. The questions in Arithmetic include the first four rules, simple and compound proportion, vulgar and decimal fractions, and include such as have a practical bearing on the candidate's future work. The Algebra requires the elementary rules, with simple equations, and the use of symbols and factors. In the elements of plane geometry, a knowledge of the first two books of Euclid will be

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required, and of the subjects treated in them. For the benefit of candidates who have not studied the text of Euclid, alternative questions on Theoretical and Practical Geometry will be set.

4. Geography and History. Short questions in the geography of Europe, especially the British Isles; and the prominent events in English history from the Norman Conquest to the end of the Tudor period.

5. Latin, Italian, French, or German (one language only). One to be previously selected by the candidate. Short, easy passages for translation into English, with a few simple grammatical questions, and short, easy sentences for translation into the foreign language.

6. Geometrical Drawing, which includes the construction of scales, and the delineation to scale of some simple plan or elevation of a building; or Elements of Perspective—simple problems in perspective. The choice is left to the candidate.

7. Elementary Mechanics and Physics: simple questions on the resolution and composition of forces, the mechanical powers, centre of gravity, etc. No trigonometrical calculations are involved.

8. Freehand Drawing from the Round. Some simple subject.

Persons who have passed (a) the Matriculation Examination of any University in the British Empire; (b) the Senior or Junior (Honours) Local Examination of any University in the British Empire; (c) the Examinations for the First Class Certificate of the College of Preceptors; (d) the School or Leaving Certificate of the Oxford and Cambridge Schools Examination Board; (e) the Examination of the Central Welsh Board; (f) the Senior or Junior School Examination of the University of

London; or (g) such other examination as may be satisfactory to the Board—are exempted from submitting themselves for examination in 1, 2, 3, 4, 5, and 7 of the subjects given above; but certificates of having passed such examinations only exempt applicants in the subjects covered thereby. Candidates who have obtained a success in any of the Board of Education Examinations in Art held in 1913 and subsequently will be exempted from subjects 6 and 8.

But an applicant claiming exemption from the first five and the seventh subjects who sends, with his application for exemption and evidence in support of it, a set of drawings (not exceeding four) which show his acquaintance with geometrical drawing or the elements of perspective, and with freehand drawing, will be further exempted from subjects 6 and 8, provided his drawings are considered satisfactory by the Board of Examiners. All charges connected with the carriage of drawings and certificates must be borne by the candidates. Applicants unsuccessful at their first sitting may sit again once without further fee; but, should they fail to pass again, a fresh fee must be paid for every subsequent attempt. “Relegated” candidates who fail to obtain half-marks at a subsequent examination will not be allowed to sit again for relegated subjects only, but will be required to take the whole examination.

When this examination is passed, the successful candidate is registered as a Probationer of the Royal Institute of British Architects. If he desires to qualify for the next stage, that of Student of the Institute, he must pass the second or Intermediate Examination. He must, however, be at least nineteen years of age before entering for it. It is held in the months of June and

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November, and the fee is three guineas. He will require a testimonial of fitness from some person of recognized position, and must present "Testimonies of Study," certified as his own work. These consist of eight sheets of drawings neatly and carefully finished, the first six being accompanied by a written description with illustrative sketches. Some of the drawings submitted should be from actual measurement by the candidate. Architectural students of the Royal Academy have certain exemptions from these testimonies of study. The subjects of the Intermediate Examination are mainly professional, dealing with styles of ornament, orders of architecture, and details of building construction. The rule for unsuccessful candidates in the Preliminary Examination applies to the Intermediate also. Probationers who have attended the full course in Architecture at University College, London, or at the University of Liverpool, or have attended the two years' course at King's College, London, and have obtained a First Class at the College Final Examination, or have obtained either a First Class in the Terminal Examinations of the final year, or passed a University Degree Examination in Architecture at the Victoria University, Manchester, or have obtained the Diploma or Senior Certificate of the Glasgow School of Architecture, or who, under certain conditions, have passed the four years' course at the Architectural Association, London, or a two years' course at the Architectural Association followed by a two years' continuation course at the Royal Academy Schools, or have passed through the four years' course of the School of Architecture, Sheffield University, or have passed through the three years' course and obtained the First Class Certificate at the School of Architecture, Sheffield University, may be exempted from

sitting at the Intermediate Examination, "provided that the work done by them during the session be submitted to and approved by the Board of Examiners as Testimonies of Study." Part of this examination is oral.

The stage next above that of Student is Associate of the Institution. To qualify for this, a candidate must pass the Final Examination. He must be at least twenty-one years of age. The fee is four guineas. A candidate must send a certificate of fitness from some person of recognized position, and Testimonies of Study certified as his own work. These consist of answers to at least four of the Institute Problems. The candidate must submit a thesis showing advanced and individual work in one only of the following subjects :

1. Historical Architecture—implying as far as possible the direct study of actual historical buildings.
2. Science, as applied to Building—*i.e.*, a special study of an application of science to definite problems of building.
3. Design, including Decoration—such as a study in Civic Monumental, Decorative, or other branch of architectural design.

The examination lasts seven days, the first three being devoted to the design for a building of moderate dimensions, or a portion of a more important edifice to be made from particulars given, the fourth and fifth days to Building Construction, Hygiene, Properties, and Uses of Building Material, and the Ordinary Practice of Architecture, and the last two days to oral examination on the various papers and the Testimonies of Study. The rule with regard to failure at previous examinations applies also to the Final Examination. Architects in practice, not less than twenty-five years of age, and chief assistants over thirty years of

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age, are excused from the first two examinations and the accompanying Testimonies of Study, if their application for exemption is approved. They are then admitted to the Final Examination, which is conducted in such cases "with especial regard to their professional works and position."

Full details of the examinations may be obtained from the Secretary of the Institute, 9, Conduit Street, Hanover Square, London, W. But the work required falls broadly into three divisions—a knowledge of the styles of architecture and their characteristic ornamentation, a competent knowledge of building construction and materials, and technical skill in making plans, elevations, sections, etc. Beyond these, in the advanced stages, design is essential; and accurate study and measurement of interesting buildings is most desirable. Evidences of study of this kind are required at the Final Examination. A period of foreign travel, made with the object of professional study, is very valuable; but it is, of course, possible only to a minority of young architects.

The Society of Architects also holds two examinations in October in London, and several provincial centres.

The Syllabus of the Examination for Membership is—

(1) Architectural Composition and Design. (2) Architectural History. (3) Building Construction. (4) Shoring, Underpinning, and Dangerous Structures. (5) House Drainage and Sewage Disposal. (6) Specifications and Conditions of Contract. (7) The Mechanics of Building Construction, and one of (8) Easements, Dilapidations, and Building Act Regulations. (9) Quantities and Prices. (10) Land Surveying and Levelling. (11) Setting Out and Supervision of Works. (10) Monumental Design.

Candidates for the examination must have served at least three years' pupilage to an Architect, or produce such other evidence of architectural training as the Examiners may require.

The Syllabus² for Graduateship is—

(1) English Composition : (a) An essay of not less than two thousand words, illustrated by sketches on a given architectural subject, to be written at home ; (b) an essay of not less than five hundred words, illustrated by sketches on one of two architectural subjects, to be written in the examination room. (2) Architectural Design, Orders and Styles of Architecture. A simple problem in design will be set, such as an Entrance Porch, Arcade, or other feature of a building.

Full details of the above may be obtained of the Secretary, 28, Bedford Square, London, W.C.

Recently the Senate of the University of London have passed a resolution enabling students to obtain the B.A. degree by taking Architecture and allied subjects as a branch in the Honours Course.

PROSPECTS.—It is difficult to give any definite information with regard to remuneration in the profession. In small provincial offices, an Assistant may receive from £120 to £150 a year. In larger offices, especially those of recognized standing, there are various grades of Assistants with, of course, various rates of payment. Principal Assistants are paid at a fairly liberal rate. As a rule it takes an Architect some time to establish himself on his own account. He must get a “connection” for himself, and that usually means a long and hard struggle. If he has sufficient capital he can wait for success. When he becomes established and his work gets known, he can generally earn a good income. Many Architects make themselves known by entering for competitions for designs for public buildings and similar works ; and, though they may not succeed in a particular competition, they get their names before the public. An able man, capable of turning out good, honest work, seldom fails of success in the long-run.

XVIII

GENERAL CLERKSHIPS

THE designation "Clerk" brings before us a vast host of workers in almost every department of professional and commercial activity. The term is somewhat indefinable, for it ranges from the humble junior earning a few shillings per week to the men who hold responsible and lucrative posts with our large firms.

QUALIFICATIONS.—For all Clerkships it is essential that a boy should have a sound education, as otherwise his chances of promotion will be but small. The subjects to which he should pay special attention are Handwriting—which is still, in spite of the general use of the typewriter, of the utmost importance; Arithmetic, especially of that portion connected with commercial work, together with a knowledge of rapid methods of calculation; English Composition; a good general knowledge of Commercial Geography and History; Shorthand; and at least one Foreign Language, preferably French, German, or Spanish. These, if combined with sterling honesty of character, and a zeal for work, will certainly secure a moderate and increasing income.

It should not be thought that, because a boy is to become Clerk instead of entering one of the professions, an early

GENERAL CLERKSHIPS [QUALIFICATIONS]

removal from school is desirable. He should remain at the Secondary School until he is at least sixteen years of age, after which he should, if possible, pass a year or two in a good Commercial School, where he can learn Book-keeping, Type-writing and Office Routine. If a good Commercial School is not available he should study at one of the Evening Schools. For all commercial appointments the Certificates of the London Chamber of Commerce are useful.

The subjects required to obtain these certificates are—English, with Penmanship; Official and Business Correspondence; Commercial Arithmetic, with Mental Arithmetic and Tots; Business Routine, including Filing and Practical Office Work; Bookkeeping; Shorthand; French; Commercial Geography; Typewriting.

Another course of study for the Senior Certificate of the Education Committee of the London Chamber of Commerce is Commercial Correspondence, Commercial Arithmetic, Machinery of Business, French, German, English, Book-keeping, Commercial Geography, Shorthand, Commercial and Industrial Law.

A course of training at a Commercial College will last about eighteen months, and will cost about £18.

The examinations are held in April and May at many local centres. The entrance fees are—for the Junior Examination, 2s. 6d. per subject, or 15s. for the full Junior Certificate; for the Senior Examination, 5s. per subject.

Business-like men with such a training may obtain positions as heads of their departments, with salaries from £250 to £1,000 a year.

We have already dealt with Clerkships in connection with Accountancy, Insurance, Banking, and Civil Service

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(for which consult the respective chapters), so we may here briefly consider some other avenues that call for a Clerk's services :

I. IN A BUSINESS FIRM.—A Junior Clerk will start with only a small remuneration, perhaps 8s. or 10s. a week, but, if he shows care and diligence, he may soon expect £1 or 25s. If he elects to remain in the office he may obtain £100 or £150 ; if his ambitions look beyond the office, one of the most promising careers for a clever man is that of Commercial Traveller. Many of our large firms train their own travellers, and a Clerk who takes an active interest in the firm's business, and shows an aptitude for such work, will sooner or later get the desired opportunity for advancement. Commercial travellers have been called the diplomats of commerce, and their work is of immense importance to the country. A good traveller must be smart in appearance, able to talk well, courteous, and yet not easily abashed, and if the goods he is pushing are really worth pushing, he can make an income which will range, depending of course upon the status of the firm which he represents, from £300 to £1,000 per annum.

II. IN MUNICIPAL OFFICES.—Salaries range from about £65 to £250 according to a man's experience and worth.

The London County Council.—Clerical posts under the London County Council are filled by competitive examination, and two alternatives lie before candidates for these positions.

We will deal first with what is known as the "Minor Establishment." The appointments in this department are in three sections :

Section (c).—Open to competition among youths between the ages of fifteen and eighteen years.

Section (b).—Open to competition among men between the ages of twenty and thirty years.

Section (c).—The fee for this examination is 2s. 6d. The examination consists of the following twelve subjects, of which the first six must be taken, and two only of the remainder: Handwriting and Orthography (marked from the paper on English Composition); English Composition; Arithmetic; English History—(1) General Questions, (2) One Special Period; Geography—(1) General Questions, (2) the United Kingdom, (3) a Special Region; General Intelligence Test; Elementary French; German similar to the French; Elementary Experimental Science, including Practical Work; Drawing—(a) Freehand, or (b) Geometrical; Typewriting; Shorthand.

Section (b).—The fee for this examination is 5s. The examination consists of the following eleven subjects, of which the first five must be taken, and only two of the remainder: Handwriting and Orthography (marked from the paper on English Composition); English Composition; Arithmetic; General Knowledge; Précis Writing; French; German; Drawing—(a) Freehand, or (b) Geometrical; Book-keeping; Typewriting; Shorthand.

In both Sections (c) and (b) the maximum number of marks assigned to each of the subjects of Shorthand and Typewriting is 150, or 50 higher than the maximum number (100) of marks assigned in the case of each of the other optional subjects.

Candidates for appointment in the minor establishment must be British subjects, must be free from physical defects, and, if selected for appointment, will be required to pass a medical examination.

Salaries.—Youths, under Section (c), receive 15s. per week. Men, under Section (b), receive 27s. 6d. per week,

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the salary increasing in each case by annual increments of 2s. 6d. a week to a maximum of 25s. a week and 40s. a week respectively.

There is constant promotion from Section (c) to Section (b), and also a special Section (a) of Minor Establishment Clerks with salaries from £2 to £3 a week.

There is no promotion from this establishment to the Second Class Clerkships, which we will now consider, or to the higher grade, reached by promotion from the Second Class to the First Class Clerkships.

The competitive examinations are open to British subjects between the ages of eighteen and twenty-three years, except as regards 10 per cent. of the vacancies which are competed for by assistants in the minor establishment who are over twenty-four years of age, who have served not less than six years, and who are nominated by the head of the department in which they are serving, provided that such nomination is approved by the Clerk of the Council. Forthcoming examinations are advertised in the leading London daily newspapers.

The examination is divided into two parts :

1. Preliminary.
2. Competitive.

The fee for each part is 10s. The subjects for the Preliminary Test Examination are as follows: Handwriting and Orthography (marked from the papers on English Composition, English History, and Geography); English Composition; Arithmetic; English History (general questions and a special period); Geography—(1) general questions, (2) the United Kingdom, (3) a special region; Mathematics.

Exemption from this part is secured if the candidate

has passed any, but no others, of the following examinations: (1) the Matriculation Examinations of the Universities of England, Wales, and Ireland; (2) the Oxford or Cambridge Higher Local Examination; (3) the Oxford, Cambridge, or Durham Senior Local Examination; (4) the Oxford and Cambridge (Joint Board) Schools Examination Higher Certificate; (5) the Leaving Certificate of the Scotch Education Department; (6) the Preliminary Examination in Arts and Science of the Joint Board of Examiners of the Scottish Universities; (7) the School-leaving Examination of the University of London; (8) the Second Division Examination for Clerkships in the Civil Service, where the candidate has obtained 60 per cent. or more of the maximum marks ("service" marks being excluded); (9) Part I. of the Council's Examinations for Second Class (Fourth Class) Clerkships held in or since June, 1904.

Candidates who pass this test proceed to Part II., the competitive examination. This consists of sixteen subjects, of which any four may be taken, with the addition of General Knowledge and Précis Writing. The syllabus is briefly as follows: General Knowledge; Précis Writing; English Language and Literature; Pure Mathematics; Applied Mathematics; either French, German, Italian, Spanish, or Portuguese; one other of these Modern Languages; Latin; English History; Geography; History of London; Economics; Outlines of English Central and Local Government; Experimental Mechanics; Experimental Physics; Inorganic Chemistry.

There will be examinations in (a) Shorthand, (b) Book-keeping and Accountancy, and all candidates with a knowledge of these subjects should sit for the examinations. Marks gained for these subjects will not, however, count in the general competition.

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Candidates for positions in both establishments are required to pass a medical examination. They are then regarded as probationers for twelve months.

Salaries.—Second Class Clerk, £80, increasing by £5 yearly to £100 per annum; then £100, by £10 to £150 per annum; and £150 by £12 10s., to a maximum of £200.

Promotion to the First Class is made in vacancies by order of the Council. Salaries—£200, increasing yearly by £15 to £245 per annum, then by £15 for the first year, and afterwards by £20, to a maximum of £300. There are a number of higher appointments which only the more able and brilliant officers are called upon to fill.

Thus, while the position of Clerk in the Minor Establishment offers few prospects, the Second Class Clerkship, with its wide age-limits for entry, is a tempting position for young men who are too old to enter for the Second Class Clerkships in the Civil Service.

It is to be noticed that the expansion of the London County Council has ceased to a great extent, and comparatively few vacancies may therefore be expected to occur for some time.

Details can be obtained from the Clerk of the Council, County Hall, Spring Gardens, London, S.W.

In the offices of other County and Borough Councils there are also numerous vacancies, the conditions of appointment and scale of salaries being obtainable from the respective clerks.

III. SOLICITORS' CLERKS.—The Solicitor's Clerk almost invariably begins at the lowest rung, commencing at the age of fifteen or sixteen. There is no definite standard of knowledge required, but a boy should be able to fulfil the requirements outlined at the commencement of this

GENERAL CLERKSHIPS [SHIPPING, ETC.

chapter. Appointment is usually obtained by personal application at the office of the solicitors themselves. Among the best offices to enter are those of solicitors who hold public appointments, where a youth may possibly work his way upwards to an important post. The commencing salary is usually small, rising to about £250 per annum in good offices.

IV. SHIPPING.—A sound knowledge of figures, an intelligent grasp of Geography, a quick insight into the conditions of the markets, and, if possible, some acquaintance with French, German, or Spanish, will be of the utmost value. A Clerk in Shipping enters upon a five years' apprenticeship, during which time he receives a payment of £100, in progressive amounts per annum. Good posts are offered as Chartering Clerks, Book-keepers, Cashiers, with salaries of £250 to £400. An able man may also find an opportunity to start on his own account as a Shipbroker, and, of course, if he succeeds, he will then make a large income.

V. RAILWAYS.—A very large number of Clerks are employed both in the passenger and the goods departments of our large railway companies. A fair general education, with a knowledge, if possible, of Shorthand, are the main qualifications. A nomination should be sought from a Director, and application should then be made to the District Superintendent. An examination has generally to be passed in Reading, Handwriting and Orthography, Arithmetic, English Grammar, Composition, and the Geography of the United Kingdom. The age preferred is about fifteen. After appointment the Clerk is examined from time to time to determine what progress he has made in fitting himself for the service.

Salaries are small, starting at 10s. a week, and rising

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by the sixth year to 24s. After this a youth's prospects will depend entirely upon himself; if he shows exceptional intelligence or smartness in any direction, he will receive speedy recognition, and he may attain ultimately to a lucrative and responsible position.

VI. THE STOCK EXCHANGE. — The prospects of the man who is content to be just an ordinary Clerk in a Stockbroker's office are poor; the supply is greater than the demand, and he cannot expect a larger salary than £200 per annum as a maximum. On the other hand, it is through a Clerkship that entrance to the London Stock Exchange is secured, and the coveted membership thereof obtained. Individual members and firms on the Stock Exchange are allowed to introduce only a limited number of Clerks into "the House," and so a House Clerkship is a privilege. Further, the Committee of the Stock Exchange require that every applicant for admission to membership must have served as a Clerk in the House or the Settling Rooms for two years (with a minimum service of one year in the House), and exceptional facilities are allowed an applicant who has served in the House or the Settling Rooms for four years (with a minimum of three years in the House). Thus a Clerkship with a Stockbroker, that carries with it the promise of introduction as Clerk into the House, is much sought after, and a premium is often required. It is the door by which a clever business man may become a member of the Stock Exchange. Members of the Stock Exchange are either Brokers or Jobbers; the distinction between them is this—the Broker transacts business with the outside public, and buys from, or sells to, the Jobber, while the Jobber deals only with the Broker or with other Jobbers, not with the public. It will thus be seen that a young man, seeking service in the office of

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a Broker rather than in that of a Jobber, gets a better insight into the whole method of Stock Exchange business, and has a complete view of a transaction from the time when a client gives instructions to the Broker to buy or sell until the stock is finally received from the seller or delivered to the purchaser.

VII. CABLE COMPANIES.—Another field for employment is that of a Clerkship in one of the Cable Companies' Offices. The following particulars relate to the Eastern Telegraph Company in particular, but also give some indication of the requirements of other Companies. Applicants must be between fifteen and seventeen years of age, and free from physical defects. Candidates are appointed after an examination, which is a simple one, good Writing and Spelling being indispensable requisites. A premium of £48 must be paid by each probationer, £24 on appointment and the remainder in instalments. The period of probation is eighteen months, during which time he receives no salary for the first six months, £2 per month for the next six months, and £3 per month for the remaining time.

The period of training is spent partly in London, and afterwards in Cornwall. Parents bear the cost of board and lodging while the probationer is in London, but afterwards it is defrayed by the Company out of the premium.

On passing the necessary examinations, the probationer is placed upon the regular staff, after which promotion depends upon merit and ability, together with seniority. The salaries rise from £48 to £204 per annum, with a special allowance varying from £24 to £150 per annum to those on foreign service.

XIX

ADVERTISING

ADVERTISING is a profession of comparatively recent growth that is closely allied to that of journalism. Adequately to estimate what it offers as a career to the average Public School boy, some definition or statement of exactly what is advertising must first be given. It has been variously described as "the science and art of salesmanship by written word," "salesmanship on paper," and "business news." Literally, the word means "drawing" or compelling attention. Time and usage often alter the sense of words, enlarging the meaning of one term and restricting that of another. Advertising affords an instance of this tendency, for it has come to mean the drawing the attention of others towards oneself or one's goods with a view to self-profit. It is a link between trader and public, one of the most important means which the former utilizes to get in touch with and impress the latter with the advantages of the commodity that he has for sale. All persons engaged in assisting the trader to attain this end are members of the advertising profession. Obviously, therefore, when one considers the extent and diversified nature of present-day advertising, there must be various classes and distinctions in the advertising profession.

For the purposes of this chapter, it may be taken that

modern publicity has brought about the creation of several distinct, yet correlated professions, which may all be legitimately combined under the title of the advertising profession. The men variously engaged in these branches are the Advertising Agent, the Advertising Manager, the Advertising Canvasser or Representative, and the Advertising Writer.

A NEWSPAPER ADVERTISING DEPARTMENT.—

The columns of any daily newspaper afford an indication of the extent and importance of modern advertising. If we bear in mind the fact that the revenue received by a newspaper, weekly, or magazine, is its whole financial backbone, and that, without regular and plentiful advertisements, newspapers could not be published except at a prohibitive cost of perhaps one shilling or more per copy, we can realize the necessity for a large and able staff to obtain, collect, write, and otherwise deal with advertisements. It will perhaps be of advantage if some account of the work of a daily newspaper's advertising department is given.

At the head of the department is the Advertisement Manager, who is sometimes reinforced by an Assistant Advertisement Manager. His duty it is to organize, control, direct, and manage the advertising staff, which may be divided into two classes—Outside Representatives, whose function is by canvassing to obtain advertisements from advertisers and advertising agencies; and Inside Representatives, who have to write, correct, and otherwise deal with all matters relative to the publication of the advertisements obtained by the first-named. Each Outside Representative has his own particular allocation; that is to say, his activities are directed towards one or more

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classes of advertisers, such as West End Stores, or the motor trade, or the City (*i.e.*, all financial advertising), or publishers, etc. In the case of one of the leading London dailies of which we have personal knowledge, there are a number of these representatives, each with a definite sphere or area for which he is responsible, through his departmental Manager, to the Advertisement Manager. There are so many representatives to obtain and collect classified advertisements—that is to say, those hundreds of small “wants,” situations vacant, or domestic servants, auctions, entertainments, business opportunities, property for sale or to let, etc.—which appear in nearly all the daily newspapers. There are subdepartments to deal with all advertising in the literary, financial, or engineering columns, all being subject, of course, to the direction and control of the Manager. As regards the indoor staff, this is necessarily large. Every newspaper has a general advertisement office for the reception and payment of advertisements, with accountants and cashier’s department. This applies mainly to “smalls,” as they are called. The display advertising—that is to say, all the larger advertisements which appear in the body of the paper—requires to be carefully dealt with by indoor men, set up in type, proofs passed, position and dates in the paper arranged, and so on.

“COPY-WRITERS.”—Often an advertisement has to be designed and written, and for this purpose special writers, commonly termed “Copy-Writers,” are employed or retained. This is a distinct profession in itself, and requires some detailed attention.

A Copy-Writer is one who specializes in designing and writing advertisements. He may be employed for that

purpose by a Newspaper or an Advertising Agent or Agency for the benefit of its advertising, or directly by any commercial firm which conducts its own advertising arrangements, or he may adopt the “free lance method” already referred to in the chapter on journalism. Copy-writing is a branch of the advertising profession that calls for high talent. Nothing looks easier than to write “the things they put in the papers.” In actual fact, nothing is harder than to design and write forceful advertisements which will not merely appear clever, for that is a poor test of a good advertisement, but which “sell the goods.” Copy that, judged by results, has failed to sell the article advertised, is of no use, however clever or sensational or well-displayed it may be. Successful copy-writing is conviction by argument, not necessarily in the presence of opposition, for a reader may quite unconsciously be influenced towards a certain line of action. To achieve that end, to make the reader accept the advertiser’s statement and claim without question, should be the purpose of every piece of copy put out.

Advertising copy of to-day is either of the “displayed” or “literary matter” form. As regards the former, a careful study of, say, the front outside page of the *Daily Mail* any day will give a clear idea of what “displayed” advertisements are. As to the “literary,” or “written-up” advertisement as it is called, this is almost identical with a journalistic article. It calls for great literary ability, concise and attractive style of writing, use of logic and persuasion. It is generally printed in type similar to the editorial contents of a page, and often (wrongly, in our opinion) is indistinguishable, or nearly so, from editorial matter. The practice of adding to such “written-up” advertisements the letters “adv’t.” is not universal.

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There is a tendency on the part of newspapers to employ skilled writers able to build up good copy in either displayed or "written-up" form. Much fine advertising of the latter kind has been written in connection with the special supplements and numbers that certain journals publish from time to time. It is an advantage to a newspaper advertising staff to embrace such skilled Advertisement Writers, to assist its outside representatives in obtaining business.

ADVERTISING AGENCY WORK.—Advertising agencies may be divided into two classes: First, "Space-Brokers," who merely arrange for the insertion of an advertisement in so many media on a small percentage basis; and secondly, "Service Agents," who are able to offer to a firm or manufacturer a complete advertising service that embraces the placing of a new product on the market, planning a campaign, designing, writing, and arranging for the insertion of all advertisements, and conducting all subsidiary forms of publicity, such as poster advertising, form letter writing, circularizing, etc. This service involves the necessity of having a highly-organized and capable staff of men, each skilled in his own particular work. Such a service agency in some respects closely corresponds to the advertising department of a newspaper, though embracing certain departments which do not obtain except in an advertising agency. Skilled Canvassers or Outside Representatives, expert Copy-Writers, Artists, etc., are all essential. The big service agencies—there are not many who are justified in assuming the title—have played, and continue to play, a most important part in the development of advertising.

Some commercial firms conduct their own advertising,

which is placed under the charge of an Advertising Manager, whose position varies according to the size and importance of the firm. Sometimes he is merely a glorified clerk ; in other cases he is practically an expert Sales Manager who is constantly in touch with the selling and executive departments, and may be worth several thousands a year to his employers. But the growing recognition of advertising as a distinct profession and science is seen in the fact that most of the leading national advertisers of staple articles of food, clothing, etc., delegate the conduct of their advertising to one or other of the various advertising agencies.

HOW TO ENTER THE ADVERTISING PROFESSION.

—There are no examinations, fees, or age limitations for those who wish to take up advertising as a career. Influence is useful in placing a boy at an early age in an advertising agency or newspaper office ; but its value extends no further. It is our conviction that it is wise to start early. Of the younger generation of advertising men who have succeeded in their profession, those who started at the ages of sixteen or eighteen have gone furthest. But there is no glossing over the fact that many of the most successful advertising men of the present day have merely drifted into the profession after indifferent success or failure in other walks in life. Such a fact seems to suggest that specialized education is not essential. But certainly the Public School boy who has been well grounded in the following subjects starts with many points in his favour :

Essay writing and cultivation of literary style (for which a good grounding in the classics has its great value).

Précis writing, condensing an article and picking out its chief points.

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Mathematics.

Drawing.

Geography, physical and commercial.

General reading to increase his general knowledge.

Political economy, logic, and psychology are not exactly subjects taught in our public schools, but the candidate for honours in the advertising profession will do well to study such subjects in his spare time. Logic and psychology are particularly to be recommended. Such books as Mellone's *Principles of Logic*, Dill Scott's *Psychology of Advertising*, etc., are advised. The regular study of the three or four papers devoted to advertising is to be encouraged.

He must be prepared to start at the bottom of the ladder, either in an agency or a newspaper office, entry to which is gained by influence, nomination, or personal application. Much will depend upon his own initiative and industry. He should carefully study correct advertising, read the advertising journals and magazines, and in every way possible acquire knowledge as he goes along. The book knowledge which he can pick up for himself, is always useful, and as actual experience comes to him, it will correct, strengthen, and broaden the theories and knowledge he has gathered. The more one learns of advertising the bigger the subject appears, and the less one knows. That is rather paradoxical. It must be taken in the Socratic sense that the wisest man is he who knows his own ignorance.

The young advertising man must be capable of pushing himself along, if he means to succeed. Other people will not do it for him. If he lends application, industry, and enthusiasm to his work, he should get on. As time passes, his ability will probably develop in the special direction.

He may prove himself to be an expert Copy-Writer in embryo, or an Outside Representative and Business-winner. It is well that he should have experience in all branches of the work, and appointment to a good service agency is in this respect desirable.

CORRESPONDENCE COURSES IN ADVERTISING—A NOTE OF WARNING.—There has been much discussion of late in advertising circles with regard to the use or non-use of correspondence schools. Up to a certain point they are useful. But there are objections, as the following extract from a leading advertising weekly shows:

“Our objection to the whole system of lessons by correspondence is based on a consideration of the influences set in motion to induce students to take them up. It is here we find a definite weakness in the system, and one that must result in much bitterness of mind to the student. Apart from charging a fairly heavy fee for the course, most correspondence colleges do not take into account the suitability of the student for the work he wishes to undertake, and are apt to enrol anyone as a student for a course of advertising, so long as he pays the fee. This manifestly must mean that a high proportion of students are going to be disappointed with the results. The disappointment is all the more keen because of the way the promotion matter of some of the correspondence schools is set out. We have heard too much of the large salaries paid to advertising men, and the ease with which a student of advertising may, after completing his course, earn £5 per week for life. It is quite true that many advertising men do earn £5 per week, and a great deal more. It is equally true that even competent men find a difficulty in getting such a salary. But it is obvious to

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any man, if one takes five hundred unselected students and promises each of them, either in direct or indirect terms, that at the end of the course he will be worth £5 per week, the suggestion must come perilously near misrepresentation. At all events, whether one would employ so harsh a term as 'misrepresentation' or not, the fact remains that alluring promises of this kind bait the prospectus for a certain type of man, and lead him to courses of instruction which cannot be of any material advantage to him.

"The weakness of teaching advertising by post is that the inducements offered for the purpose of enrolling students are too optimistic. It is almost cruel to say to Tom, Dick, and Harry, that a few months' study of advertising will turn the 30s. salary into £5 per week. Never has this been possible in advertising, and it never will be. We can quite believe that five or six of every hundred students are situated in such a way that after absorbing a complete course of advertising, and having gained some actual experience, they may pass into the ranks of publicity workers, and make incomes of from £250 a year. We should think this an optimistic view of the situation. We are equally confident that, of every hundred students enrolled, 95 per cent. are men of a type who can turn advertising knowledge to but little extra profit, and we confidently aver that of that 95 full 50 per cent. are of a type who have neither the education nor the natural ability to profit by the instruction at all, or even to understand it in a practical manner."*

EMOLUMENTS.—The salary to commence with will be small, ranging from perhaps 10s. to 25s. As a man be-

* *The Advertiser's Weekly*, November 29, 1913.

comes more useful to his employers it will rise, if he has sufficient push in him to demonstrate the fact of his growing value, and not merely to wait for a "rise" just to happen.

An Advertisement Writer may earn anything from £100 to £1,000 per annum, according to ability. Few reach the latter figure.

The Outside Representative who canvasses for business for a newspaper or agency may earn £100 to £600 per annum; occasionally, in the case of the most successful canvassers, reaching and passing the £1,000 mark. The Advertisement Manager of a newspaper, or General Manager of a large advertising agency, may earn up to £2,000 per annum.

Competition is very severe in the profession, and there are always a number of advertising men out of work. Fleet Street is the "Street of Adventure" just as much in relation to advertising as to journalism. It is an unfortunate fact that, owing mainly to the ill-advised propaganda of various "schools" for teaching advertising, the profession has been boomed too much, thereby attracting an undesirable and unsuitable class of aspirants to advertising fame. There is no room to-day in advertising for anyone but those gifted with culture, character, great mental alertness, enthusiasm for their profession, and a zest for painstaking industry. Literary ability is, of course, essential, as well as wide general knowledge, for those who incline to the literary side of advertising work.

XX

FARMING, HORTICULTURE AND FORESTRY

FARMING, in its various forms, is our oldest industry, and its prosperity is a matter of concern to the whole nation. Now there are many lads who are naturally attracted to an outdoor life, and parents should give these inclinations due consideration. Many a boy, if his energies are allowed to be applied in this direction, will bring happiness to himself and advantage to the country. He may not make so much money as many do in successful business, and a few in especially successful professional careers, but he is engaged in one of the prospering trades of the country, and if he is the right man, and observes the essential conditions, he should have no reason on the financial side to regret his choice. It was recently said in Parliament by the Minister responsible for Agriculture that more money than ever is now being made by farming; he ought, however, to have added that land is subjected to heavy taxation, and that farming is, in consequence, handicapped. The freedom and healthiness of a country life are additional advantages. Foreign competition, which from about 1870 bade fair to ruin the English farmer, is perceptibly slackening. As foreign nations—*e.g.*, Germany

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and the United States—grow, and, at the same time, give more attention to manufactures, they cease to have surplus agricultural produce to send to England, for the double reason that they have more mouths to feed, and a diminishing, or at least stationary, output. This competition is still, however, an important factor in the case, and in fruit-growing it is likely to become more severe. A youth, therefore, to be successful, must be well-grounded in the technical as well as in the practical aspects of his industry. While thoroughly conversant with the internal working of a farm, he should know all that science can tell him about soils and manures in general, and the soil of his own farm, and its needs, in particular; he should understand the latest processes—*e.g.*, in dairying he should keep his eye on every movement of the foreign producer; he should study the conditions of the market, and be ready to avail himself in a skilled and thoroughly business-like way of all available subsidiary sources of income, such as fruit-growing, poultry-keeping, etc. In short, he must be like other business men. Competition is keen everywhere, and can only be met successfully by using every advantage and wasting nothing. The farmer of past years has not always realized this, and the failures of the bad times were in part due to ineffective methods and lack of proper management, and not wholly to the stress of competition from abroad. The farmer of the present day has learned, or is learning, the lesson of the need of theoretical knowledge, and of system, to supplement practical skill.

Within recent years there has been an enormous development of Agricultural Education throughout the country. The Board of Agriculture now gives grants to higher Educational Institutions to the amount of over £18,000

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per annum, and, in addition, helps the less advanced type of education to the extent of £7,000 per annum. The County Councils are correspondingly generous, though in varying degrees, and the efforts of both are so systematized and co-ordinated that, in any agricultural part of the country, the agricultural student is sure to find every educational facility that he can desire brought within reasonable reach.

Besides helping to provide education for the agriculturist, the Government is now assisting him greatly by providing him with highly skilled advice both in farming and forestry. Where his local county advisers cannot deal with his difficulties, he may now appeal to Cambridge, Leeds, and Bristol Universities, Reading and Bangor University Colleges, Aberystwith and Armstrong (Newcastle-on-Tyne) Colleges, and the South-Eastern Agricultural College at Wye—according to the district in which his farm is situated—and can command the highest skill of the Agricultural Experts of these Colleges, either without expense or at a small fee. Forestry difficulties are similarly solved by the Forestry experts of—(1) Armstrong College, Newcastle, for the Northern Counties; (2) University College, Bangor, for Wales (except Glamorgan), Cheshire, and Shropshire; (3) Oxford University for the Midlands; (4) Cambridge University for the Eastern Counties; (5) The Royal Agricultural College, Cirencester, for the South-West district.

To provide this body of skilled advisers, and enable them to conduct the great mass of research work necessary, the Board of Agriculture is spending a very large annual sum. Agricultural Research is subsidized in the current financial year (1913-14) to the extent of £38,000, and Forestry to the amount of £5,700.

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EDUCATIONAL FACILITIES.—Agricultural education, as now arranged, consists of—

(a) Residential courses at various Colleges of three or four years, leading to a degree or diploma.

(b) Short courses at the same Colleges.

(c) Short courses varying from a few weeks to several months at farm schools and similar institutions.

(d) Courses of ten to fourteen days in dairying at migratory dairy schools, which pass from one centre to another.

(e) Courses of day or evening lectures in agriculture, bee-keeping, poultry-keeping, -killing, and -dressing, farriery, and horticulture.

UNIVERSITIES AND UNIVERSITY COLLEGES.

1. **University College, Aberystwith.**—The degree course is of three years (fee, £16 per annum). The diploma course is of three years, but students attend only during the winter and spring terms, and spend twenty-four weeks during the first two years on the College farm (200 acres) or other approved farm (fee, £7 10s. per annum, and £5 for the farm course).

2. **University College of North Wales, Bangor.**—Degree course, three years; diploma course, two years (fee about £17 per session). There is a College farm of 675 acres, and an experimental area of 50 acres for forestry.

3. **Cambridge University.**—A diploma is granted without residence to students who pass the requisite scientific and practical examination, and the B.A. degree (pass) may be taken in Agriculture. Students reside during the three terms, and are advised to attend at the University farm (230 acres) during the Long Vacation, when special classes are given.

A diploma in forestry is obtained by passing the examinations for the B.A. degree, attending for one Long Vacation a practical course in a British forest, and a similar course in a Continental forest, and taking the Diploma Examination.

Students who wish to qualify as agricultural experts usually spend their first two or three years working for the Natural Sciences

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Tripas. Their third or fourth year is then devoted to the advanced course for the diploma, and they subsequently specialize in one or other branch of Agricultural Science.

Research Institutes for the study of Animal Nutrition and Plant Breeding exist in connection with the School of Agriculture.

4. University of Leeds.—Degree course as for the ordinary Science degree up to the Intermediate Examination, after which the student enters the Agricultural department for two years (fee, £27 per annum). At least six months of the time is spent on the University farm (312 acres), conducting agricultural experiments. The diploma course is of three winters (fee, £10 per annum), leaving the spring and summer for practical work.

5. Armstrong College, Newcastle-on-Tyne.—Degree course, three years (£20 per annum); diploma course, three years—autumn and winter terms only. The College has a farm of 400 acres, and has charge of 900 acres of woods for forestry instruction.

6. University of Oxford.—Diploma course, two years. The degree of B.A. (pass) may be taken in "Rural Economy."

Students of Rural Economy also attend the University departments of Botany, Zoology, and Geology, in some of which special instruction is provided. Land Surveying is studied under the University Lecturer in Surveying.

The Institute of Economic Research in Agriculture is associated with the Committee for Rural Economy, the Director being C. S. Orwin, M.A., F.S.I. Research scholars in Agricultural Economics, appointed by the Board of Agriculture, pursue research under the guidance of the Director of this Institute.

The School of Rural Economy is charged with the duty of giving instruction—both Lectures and Laboratory—in Forest Botany for probationers for the Indian Forest Service, as well as for others who may be working for the University Diploma in Forestry.

UNIVERSITY OF OXFORD SCHOOL OF FORESTRY.

Professor: Sir William Schlich, M.A.

Course of Study.—The Diploma in Forestry is granted to members of the University who have pursued an approved course of study extending over two years, undergone a course of practical work approved by the delegates, passed the prescribed examinations, and satisfy the delegates that they possess a sufficient knowledge of Engineering.

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Subjects of Examination.—Part I. : General Geology and Botany, Forest Botany and Zoology. Part II. : Forestry. *Optional Subjects* : Forest Law, Geology of India, Systematic Botany of Indian Trees.

Fees.—£2 for each part. Probationers for the Indian Forest Service must, unless especially exempted, (i.) qualify in German by June 30 of their first year of training ; or (ii.) obtain the University Diploma in Forestry by the close of their second year.

7. University College, Reading—Agriculture.—Degree course, three years ; diploma course, two years (fee, £24 per annum) ; certificate course, six months (£16).

Dairying.—Diploma course, two years (fee, £24 per annum) ; certificate course, three terms (£30), reduced for county students to £18 and £24 respectively.

Horticulture.—Diploma course, two years ; certificate course, one year (£24 per annum ; county students, £18).

AGRICULTURAL COLLEGES.

8. Royal Agricultural College, Cirencester (associated with the University of Bristol).—Diploma course, three years (fees, in-students, £45 to £55 10s. ; out-students, £25 per term, with an entrance fee of £5). Several scholarships are awarded. The College has 500 acres of farm-land and 3,000 acres of woods, with a forest garden of ten acres, and two forest nurseries, available for instruction in agriculture and forestry.

9. College of Agriculture and Horticulture, Holmes Chapel, Cheshire (affiliated to Manchester University).—Diploma course, three years ; to obtain a diploma with honours, original investigation is necessary. Fees, resident students, £75 per annum (County of Chester students, £60) ; non-resident, £30 per annum. There is a farm of 100 acres, with a herd of dairy shorthorns, and, for horticultural instruction, seven acres of garden and fruit plantation, with large range of greenhouses.

10. Midland Agricultural and Dairy College, Kingston, Derby.—Certificate course, three terms of ten weeks each, arranged so as to fill up the time between corn harvest and hay harvest, when young men can be most easily spared from the farm. Fee, £7 10s. per term ; £5 for students from co-operating counties.

Teachers' diploma course in Dairying, nine months from October, and a similar course is arranged in Commercial Dairying and Factory Management. Fees, £12 for three months ; £21 for six

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months; £27 for nine months (half-fees for contributing county students). There is a farm of 195 acres.

11. Harper-Adams Agricultural College, Newport, Salop.—Diploma course, two or three years, intended for students who have done some science and are ready for advanced work.

Certificate course, two years, less advanced, and intended to provide a training in practical agriculture. Fees, £8 for tuition, and £35 for board and lodging for Staffordshire and Shropshire students; £18 and £42 for others. There is a farm of 236 acres, and three acres of land are devoted to fruit and vegetables. Special attention is given to poultry.

12. Agricultural College, Aspatria, Cumberland.—Diploma courses, two years (*a*) for intending Farmers and Colonists, (*b*) for intending Land-agents. Short course for intending Colonists, one year. There is also a special course for the Final (Fellowship) Examination of the Surveyors' Institute. Fees, 33 guineas per term. Scholarships—Entrance and First Year—of the value of £20 each. Practical work on nine neighbouring farms, and a large Dairy Company's Creamery, also forestry work in the woods of Brayton Park.

13. Agricultural and Horticultural College, Uckfield, Sussex.—Certificate course, two years. There are also a twelve-weeks' winter course for farmers' sons, and a land-agency class (fee, £5 5s.) from October to March. Fees, resident, £25 per term (East Sussex students, £16 13s. 4d.); non-resident, £10 10s. per term. For the twelve-weeks' course the fee is £2 2s. per week (county students, 15s. per week; if non-resident, £4 4s. for the course).

There is a farm of 101 acres, and a garden of five acres. Special attention is given to horticulture and poultry-farming.

14. South-Eastern Agricultural College, Wye, Kent.—London B.Sc. course, four years; diploma course, three years; certificate course in Agriculture and Commercial Fruit-growing, two years. Fees, resident, £120 per annum; tuition only, £70 per annum (Kent and Surrey students, £60 and £15).

There are farms of 460 acres, including a hop-garden of 7 acres, 16½ acres devoted to horticulture, and a small area to the French system of raising vegetables. Demonstration plantations and a nursery for forest trees are being established for instruction in Forestry.

N.B.—At nearly all the above short courses of a few weeks, with

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proportionate fees,¹ at convenient times of the year, are arranged to meet the needs of those whose time is limited.

SPECIAL INSTITUTIONS.

15. British Dairy Institute, Reading.—Managed by a committee representing the British Dairy Farmers' Association and University College, Reading

Fees, £1 per week, £10 for three months, £18 for six months (special six months' course, from March to September, £16).

16. Harris Institute, Preston—National diploma course, four winter sessions of twenty six weeks each; short course, two sessions.

Sons of Lancashire farmers admitted free; other county students pay a fee of £3 3s. per session. There are scholarships and allowances awarded. External students pay £10 10s. per session.

17. National Fruit and Cider Institute, Long Ashton, near Bristol.—Affiliated to the University of Bristol, to which applications for information should be addressed.

18. Royal Horticultural Society's School, Wisley, Surrey.—Two years' course, fee five guineas. The teaching is mostly practical and outdoor.

FARM SCHOOLS, DAIRY SCHOOLS, ETC.

BEDFORDSHIRE COUNTY COUNCIL—Bedford Agricultural Institute, Ridgmont, Aspley Guise.

CUMBERLAND AND WESTMORLAND COUNTY COUNCIL—Farm School, Newton Rigg, Penrith. Fee, resident (county students), 10s. per week.

DENBIGH COUNTY COUNCIL—Dairy School, Llewenni Hall, near Denbigh.

ESSEX COUNTY COUNCIL—East Anglian Institute of Agriculture, Chelmsford.

Agriculture Course.—Fee, £1 per week (county students, 2s. 6d.).

Dairy School.—Fee, £1 per week; £10 for twelve weeks (county students, free).

Horticulture.—Fee, £1 per week (county students, free).

HAMPSHIRE COUNTY COUNCIL—Farm School, Basing. Resident fee £1 5s. per week (county students, 15s.; or, if connected with land, 10s.); day pupils £1 per month (county students, 10s.; if connected with land, 5s.).

LANCASHIRE COUNTY COUNCIL—County Council Farm, Hutton, Lancs. Resident fee, £1 12s. 6d. (much reduced for county students).

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SOMERSET COUNTY COUNCIL.—Fixed Cheese School; stationed at a farm each year from April to October; course one to four weeks. Fee, for four weeks, £5 5s., non-resident; resident, £1 per week for county students.

WARWICK COUNTY COUNCIL.—Dairy School, Griff House, Nun-eaton. Resident fee, £1 per week (county students, 10s.).

YORKSHIRE COUNTY COUNCIL.—The Dairy School, Garforth, Leeds; maintained by the Three Ridings in connection with the University of Leeds.

WORCESTER COUNTY COUNCIL.—Droitwich Experimental Garden. Six acres, devoted to experiments in fruit and vegetable cultivation and French gardening.

From this list of courses, long and short, the student should be able to select what he needs, and what he can afford. It should be noted that many of the County Councils give scholarships open to dwellers in the county. Many who look forward to farming for themselves reject all long collegiate courses, and begin by going for two or three years as pupils (usually paying a premium) to successful farmers of the type that they aspire to imitate. To them the nearest Agricultural Collège offers short winter courses, which may supply as much scientific knowledge as they will practically require. This need not be very great if they learn enough to be ready to take on occasion the expert advice so easily accessible to the farmer of to-day. But the full degree—or, at least, diploma—course is still worth taking for those who can afford it, more particularly if they anticipate having to take service as managers on another man's farm before they can have one of their own. For any form of advanced or theoretical work, the full degree course is obviously indispensable. It will be seen from the details given above that such a course may be taken at a cost varying from £60 per annum upwards for either two or three years. The summer vacations should be spent, if

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possible, on a farm, and also the shorter vacations of Easter and Christmas; a visit to the Continent to learn something of the latest methods of agriculture and dairying will be time wisely spent, and the expenditure necessary will be light. If we calculate the annual cost of a year's training at £130, and take this on the basis of even a three years' course, we may say that a good scientific training can be secured for £400. This may, of course, be reduced by gaining a scholarship.

PROSPECTS—(a) **Research and Scientific Work.**—Excellent prospects can be held out for such as are interested in Agriculture or Forestry, and are prepared to approach these subjects from a scientific standpoint. Government appointments, both at home and in the Colonies, more particularly in the latter, are now being made with increasing frequency; and it is to be expected that the demand for properly trained experts will be in excess of the supply for some time to come—at least in some departments.

A degree in Science, preferably in Honours, is very desirable as a basis for the Agricultural degree or diploma in this case.

The character of the appointments can be roughly grouped into four classes:

1. *Practical.*—Comparative experiments on the value of different fertilizers in stimulating the growth of crops, and of different foods in feeding animals. Also experiments in the breeding of plants and of animals, and the raising of new varieties, etc.
2. *Mycological and Bacteriological.*—Investigation into the fungoid diseases of plants and various diseases of animals, and methods of cure and prevention.

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3. *Entomological*.—Investigation, on lines similar to the above, into the insects injurious to crops, etc.

4. *Chemical*.—Analysis of soils, manures, foodstuffs, etc., and elucidation of problems pertaining thereto.

The pay is in most cases sufficiently remunerative, and a pension is connected with all Government appointments.

Agricultural Appointments in our Colonies and Protectorates.—There is an increasing demand for University men with good scientific qualifications—men who are fitted for specialized work as Agricultural Chemists, Mycologists, Entomologists, Economic Botanists for hybridization work, and Scientific Botanists for botanic gardens. These appointments are in the West Indies, Ceylon, Federated Malay States, and East and West Africa. Application should be made to the Colonial Office. The commencing salary of such posts is about £300 a year.

(b) **Teaching.**—The number of teaching posts, usually associated with research work, in the various Colleges is increasing, and the prospects are very good for really capable men, and, in many cases, women.

For such posts the student will prepare himself by taking an Honours degree in Science before specializing in any branch of agriculture.

Minor teaching posts in connection with dairying, poultry-farming, etc., are also numerous, and for these certificate courses will generally suffice.

Intermediate positions may be obtained on the strength of a diploma course, but in all cases a degree is very desirable.

(c) **Practical.**—He who has gone through a course of training, and intends to become a practical farmer, should begin by getting work on a farm for a year or two to gain

FARMING, HORTICULTURE AND FORESTRY

experience, and should be content with only a small remuneration for his services. Then, after a time, he will be ready to take a farm for himself.

His success will depend (*a*) on the extent to which he has made his training a reality to himself—on how far it has fitted him to deal with the problem of every day; (*b*) on the possession of sufficient capital; (*c*) on business qualities, especially thrift, method, and cleverness in buying and selling. Without assiduous personal work and attention nothing can be done in a business of such multitudinous small details as this. “The master’s eye makes the grass grow.”

With the necessary qualities, and the necessary funds, the farmer of to-day has a good chance of securing a satisfactory income. Special talents, such as go to make a good stock-breeder, may make his income a large one. The amount of capital needed is said to be in general about £5 to £10 per acre for the stocking of the farm, and, in *addition*, enough reserve to pay expenses for a year or two, in case of bad season.

No business can prosper with insufficient capital; and the recurrence, at intervals, of bad seasons, makes farming on an insufficient financial basis especially dangerous.

It will have been seen that the various educational courses available give preparation not only for farming proper, but also for horticulture, for market gardening, and for forestry. The prospects are a matter for expert advice. Probably in most cases these careers must be approached by the road of a premium apprenticeship, following on, or associated with, a good course of theoretical instruction. Particulars about the Indian Forest Service will be found in the chapter on the Civil Service.

XXI

COLONIAL OPENINGS

GREATER BRITAIN beyond the seas needs a share of the best of our sons, and offers them vast and splendid opportunities. Canada, Australia, South Africa are ready to welcome the young settler who is likely to help in the development of his adopted country. At home the professions are over-crowded, and competition for commissions in the Army or for good Civil Service appointments is so severe that a large number of our sons, sound in wind and limb, robust, adventurous, and intelligent, find it difficult to secure congenial employment. To all such we would say: "Why not the Colonies?" Canada has an estimated population of 8,000,000, and she needs 50,000,000. Australasia, again, has a total population of a little over 5,000,000, and she has room for ten times that number; South Africa, with its older colonies and its later ones, offers a great field for British energy; while Southern Rhodesia, where Europeans only number at present 24,000, is waiting to be opened up.

Mr. F. W. Chance, formerly M.P. for the City of Carlisle, and one of her leading manufacturers, remarks as follows with reference to Canada: "In Western Canada skilled artisans earn four to five dollars a day, and unskilled labourers two to three, but they have to work very

hard for their money. In Eastern Canada wages are not quite so high. Food costs much the same as with us in Eastern Canada, and rather more in Western Canada. Clothing is about 50 per cent. dearer, and rent two or three times as much, but a good many working men buy a plot, and as soon as they can save sufficient money build a frame house. I may mention that all the small requirements of life cost more, as 5 cents ($2\frac{1}{2}$ d.) is the lowest recognized coin in the West. It must also be remembered that excepting on the Pacific Coast all building operations are suspended for five months of the year, and those who are stopped only get casual work, such as snow-shovelling, so that during the winter those in this trade have to fall back on their summer savings.

“Canada is, without doubt, a land of great opportunities for the practical man who is sober, has a good constitution, and can adapt himself to his environment, but it is no place for loafers or third-raters, nor should I advise the clerk class to try their fortunes there, as relatively to skilled labour the remuneration is poor. Good agricultural labourers can always find work, but it is well for them to realize that not only is the winter very severe, but the loneliness of the life is somewhat trying. The attractions of Canada, which are so glowingly depicted in the clever advertisements of the railway and land companies, require considerable discounting, and I would always impress upon intending emigrants that Canada is not England, though part of the British Empire, and that the adapting process may require some time and patience, especially for the women-folk.

“Nothing impressed me more during my tour than the alertness and earnestness of purpose and wholesome democratic spirit, and also the absence of snobbishness, which

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seemed to pervade all classes. No doubt climate and the fact that everyone is 'on the make' partly account for this, for, as I have already said, Canada is a country of great opportunities, being a vast continent with great resources and a small population. Agriculture will always be the backbone of her prosperity, and British Columbia is one of the finest timber countries in the world. With improved railway facilities, there also will be a great development of her mineral resources, which are very considerable. Canada is a hive of workers. There the best man as a rule comes to the front by sheer force of character, and nearly all their successful men have worked their way up from the ranks. They have no use for drones, whatever class they may belong to, and I believe this fact has largely contributed to their prosperity. I think it would be greatly for our good if this sentiment was more general with us.

"Canada is on her way to become a great nation, and I think the Mother Country may look on with pride, and perhaps learn some lessons from her energetic and prosperous offspring."

As a general statement, we may say that it is unwise for a youth to go to Canada or Australia with the intention of at once practising a profession. With improved educational facilities, such as are afforded at McGill University, Montreal, Trinity College and Wycliffe College in the University of Toronto, King's College, Windsor, Nova Scotia, etc., the colonies are now able themselves to fill up such vacancies as may occur in these paths of life, and the new-comer, besides being handicapped by unfamiliarity with the people, is apt to be regarded as an intruder. These drawbacks can be largely counteracted in Canada by passing through a course of study at one of

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the Universities of the Dominion. Under such conditions the emigrant will find that a professional career in Canada requires less outlay and brings more rapid advancement than in the Old Country, though the prizes are not so valuable. The emigrant who goes out without definite prospect of work is almost certain, in this sphere, to meet with failure and disappointment. If he goes to these Colonies, he should go there, generally speaking, to engage in farming—whether wheat-growing, or stock-raising, or dairying, or fruit-growing; good openings, however, are to be found in industrial undertakings, both in Canada and Australia, as well as in South Africa, and also in mining and engineering operations; in fact, there is scope for employment of capital and trained ability in almost every direction.

The attention of parents is called to the

PUBLIC SCHOOLS EMIGRATION LEAGUE.

Committee.

HON. T. A. BRASSEY.	Dr. C. NORWOOD (Bristol Grammar School).
Rev. Hon. EDWARD LYTTELTON (Eton), <i>chairman</i> .	C. W. KAYE, Esq. (Bedford Modern School).
Rev. Dr. GOW (Westminster).	Rev. Canon SWALLOW.
Rev. H. COSTLEY WHITE (Bradfield).	Dr. GEORGE PARKIN, C.M.G. (Rhodes' Trust).
RICHARD JEBB, Esq.	HON. RUPERT GUINNESS, M.P.
Principal J. R. AINSWORTH-DAVIS (Cirencester).	

Organizing Secretary.

W. A. EVANS, Esq., 12, King's Bench Walk, Temple, E.C.

OBJECTS OF THE LEAGUE.

The Public Schools Emigration League has been formed under the auspices of the Headmasters' Conference and the Headmasters' Association to furnish information, guidance, and protection to boys leaving the Public and Secondary Schools of the United Kingdom who intend to make their livelihood by farming or in other occu-

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pations in the Dominions and Colonies of the Empire. Every other branch of emigration has been specialized, and many associations have been formed to direct and assist the poorer classes of emigrants; but hitherto no organized effort has been made on behalf of boys of the upper and middle classes who, by choice or necessity, will find their life's work in the new countries within the British Empire.

ORGANIZATION.

The League has been organized with a central office in London, under the direction of a committee, and on the basis of branch offices in Canada, South Africa, Australia, and New Zealand, co-operating with local advisory committees in the leading centres of population. The necessary funds are provided chiefly by subscriptions from the Secondary Schools in the United Kingdom, by donations from public bodies, emigrants, parents of emigrants, and others interested in the work.

TRAINING BEFORE EMIGRATION.

An arrangement has been made with the Royal Agricultural College, Cirencester, by which boys can receive six months' (two terms) special Colonial training at an inclusive charge of £47 per term. The course embraces practical agriculture (with elements of fruit culture if desired), farm book-keeping, carpentry, forge-work and farriery, and harness-work. The College experimental area is 60 acres, and the College Farm 500 acres in extent.

Short courses have also been arranged at University College, Reading, and University College, Aberystwyth, where the fees for instruction, board, and residence approximate £40 for the six months (October to March).

A preliminary training of about six to eight weeks may be arranged for on the Hon. Rupert Guinness's farm at Woking, which is worked on lines similar to those obtaining in Canada. The inclusive cost amounts to rather less than £1 per week. Prospectus, rules, etc., may be obtained on application (see also p. 495).

INFORMATION BUREAU.

The League provides an Information Bureau. Besides leaflets or its own, official literature is supplied, giving general information regarding present conditions in the Dominions of the British Empire beyond the seas. Special attention is paid to the particular information required by members of the League and intending emigrants.

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A list of publications bearing on the subject of emigration to the Dominions is obtainable from the Secretary of the League.

LAND SETTLEMENT.

The League is not interested as proprietor of land in any Dominion. It is the function of the local committees overseas to make arrangements with reputable farmers and others who are willing to receive and pay a fair wage to young men willing to work ; no introductions are given to persons who demand a premium for receiving or instructing intending settlers.

N.B.—Parents are advised to communicate with the Secretary of the League before entering into any arrangement for paying a premium for the instruction of their sons in agriculture.

SELECTION OF EMIGRANTS.

In order to obtain the assistance of the League, each applicant must produce a certificate from the Headmaster of the school he last attended, and testimonials from other responsible persons, showing that he is physically and morally fit for the position he is seeking. This is insisted upon as an absolute condition in the interests of everybody concerned. It will be recognized that the reputation of the League must be upheld, and that the prospects of young men emigrating under its auspices may be seriously prejudiced by the misconduct or failure of those preceding them.

SERVICES OF LOCAL AGENTS AND CORRESPONDENTS.

The League is designed to serve as a protective agency, and in every possible way to assist young men from the time they wish to go abroad until they are in settled employment, or, in the case of agricultural students, until they take up land on their own account. The local committees and correspondents will be always ready to give advice and to help in other ways when any difficulties arise. A list will be prepared in each of the Dominions and Colonies overseas of all those willing to lend a helpful hand to the emigrants of the League.

EMERGENCY FUND.

It is inevitable that there will be occasions when, for sickness or other reasons, ready money may be required before explanations can be made by letters home, and applications for help will be made

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to the League's local committees. To meet this contingency parents are advised to make a deposit of from £5 to £20 in a Bank, and to sign a formal paper authorizing the Bank to honour a draft signed by a secretary of the association and a member of the local committee for an amount not exceeding £5. This money so deposited to be returned after two years, if desired, by the depositor.

For all further information application should be made to W. A. Evans, Esq., 12, King's Bench Walk, Temple, E.C.

The Agents-General of the various Colonies are always willing to advise young settlers and to supply a list of official publications. Very useful circulars are issued by the Emigrants' Information Office (established by Her late Majesty's Government in 1886 for the purpose of supplying trustworthy information), 34, Broadway, Westminster, S.W.; the *Professional Handbook* (3d.), published by this Office, gives wise advice to those who are anxious to practise a profession in the Colonies; handbooks are also issued by the same Office on the Transvaal, Orange River Colony, West Indies, Ceylon, etc. These handbooks and the useful "combined circulars on Canada, Australia and New Zealand, and South Africa," may also be obtained at most of the principal Public Libraries, and should always be consulted by intending emigrants, as they contain the most recent information about countries in which conditions are always fluctuating. Those who intend to take up agriculture are warned by Colonial Authorities to pay no premiums, and to invest no capital until experience of the conditions of farming in the locality has first been gained.

The information that follows about the various Colonies has been either supplied through the courtesy of the Agents-General or summarized from the official handbooks and circulars.

Extracts have also been made, by permission, from the summaries supplied to the *Public Schools' Year-Book* (5s. net. The Year-Book Press, 31, Museum Street, London, W.C.), which contains a mass of useful information for parents.

CANADA.—Canada, the largest and nearest of the Colonial possessions of the Empire, offers a wide field for the employment of the energies and capital of Public School men. Information and advice may be obtained from the High Commissioner for Canada, 17, Victoria Street, London, S.W., or from the Assistant Superintendent of Emigration for Canada, Mr. J. Obed Smith, 11, 12, and 13, Charing Cross, London, S.W. There are also Government emigration offices at Liverpool, Birmingham, Exeter, York, Usk (Mon.), Glasgow, Aberdeen, Belfast, Dublin, Carlisle, and Peterborough.

The climate is very healthy throughout the year, and the summers are drier and hotter than in England. The winters vary greatly in the different parts of the country between the Atlantic and Pacific. They last from the middle of November or December to March or April, according to locality, and are very cold (the thermometer falling considerably below zero from time to time); they are, however, bright and dry, and the dryness of the air makes the cold less keenly felt. The winter sets in later in the Maritime Provinces and the Southern Districts of Ontario than in Quebec, or in Manitoba and the North-West Territories. West and south of Calgary, in the North-West Territories, the winters are more open. It should be remembered that in the Provinces of Alberta and British Columbia, where there is little snow, there are often chill and continuous rains. On the coast of British Columbia the winters are mild; but on the high lands in

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the interior the winters are similar to those of Eastern Canada. The grapes, melons, and peaches that ripen in the open air in many parts of Quebec, Ontario, and British Columbia, are evidence of the warmth of the summer months; while the excellence of the apples, pears, etc., grown in the Maritime Provinces, show that the climate there is well suited for their production.

A free grant of 100 to 200 acres of forest land is made on the simple conditions of residence and cultivation to any settler over eighteen years of age in the Provinces of New Brunswick, Quebec, and Ontario, and of 160 acres of land in Manitoba, Alberta, Saskatchewan, and British Columbia. In Nova Scotia and on some lands in British Columbia small payments must be made. The settler should have 20s. to 25s. per acre for working capital, and in any case not less than £100 to £300, according to the scale of equipment. For stock-raising (cattle, sheep, or horses) £500 is regarded as the indispensable sum. This refers rather to the western or prairie region, where free grants of excellent land are easily obtained. He would do well to work for wages on a farm at first, in order to learn the ways of the country, entering his name there in the meantime for a free grant.

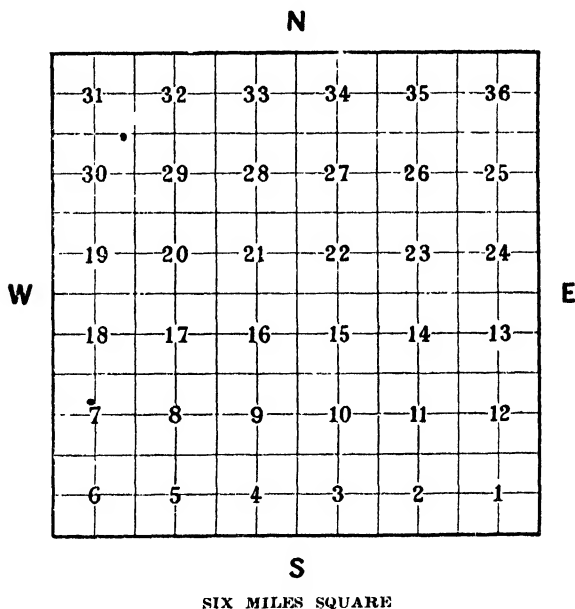
The following is the manner in which the free grants of land are made in Western Canada. The whole face of the country is divided into townships, each six miles square. The plan reproduced on opposite page from the Government publications will give some idea of the method of division.

Each of the small squares in the plan represents an area of 640 acres, and each quarter section, consequently, one of 160 acres. The Government lands open for distribution as "homesteads" or free settlements are sections

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Nos. 2, 4, 6, 10, 12, 14, 16, 18, 20, 22, 24, 28, 30, 32, 34, 36. Sections 11 and 29 are reserved by the Government for the provision of education. The land of these sections serves for sites for the schools, which are thus never more than five miles distant from any quarter section of a township, and also provides for their maintenance out of the price for which it is sold or the rent for which it is let.



Of the remaining sections, Nos. 8 and 26 belong to the Hudson Bay Company, and may be purchased from that Corporation, while others in townships surveyed up to a certain date—now long past—are the property of the Canadian Pacific Railway Company, and may, likewise, be purchased or rented by settlers.

It is advisable for those who propose to follow agriculture to acquire locally the necessary preliminary ex-

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periences. There are two alternatives before young men : First, to enter the Ontario Government Agricultural College at Guelph, or a Government College in any other Province, where both the practice and theory of agriculture in all its branches are admirably taught, at cost price, the yearly expense to the student for tuition, board, and lodging averaging under £50. Second, to "hire out" to some practical farmer on mutual terms—*i.e.*, receiving board and lodging and a reasonable wage in return for services rendered. No premiums are necessary, and it is advised that none be paid. It is considered that this apprenticeship is most necessary as a test of the fitness or otherwise of the individual for farming pursuits in Canada.

As a general rule, therefore, an emigrant should not claim his free grant of 160 acres at once. It is a common practice for a new-comer to make arrangements with a farmer in the neighbourhood of the township in which he intends to farm, and, in return for his help, to receive his board and perhaps about £12 per annum. He can then, as he acquires experience, claim his quarter section, and in most cases make an arrangement with the farmer for whom he has worked for the loan of his horses and implements to get the land into order, giving in return one-third of the first year's crop.

For further particulars of these free grants, farming, price of land, working expenses, etc., emigrants should consult the Canada Handbook, issued annually by the Emigrants' Information Office, 34, Broadway, Westminster, S.W., price 1d., post free.

Apply for further particulars either to the Chief Clerk, Emigrants' Information Office, 34, Broadway, Westminster, S.W., or to one of the following Canadian Government Agencies : London, The High Commissioner for Canada,

17, Victoria Street, S.W., and Emigration Department, Trafalgar House, 11, 12, and 13, Charing Cross, W.C.; Liverpool, Mr. A. F. Jury, 48, Lord Street; Birmingham, Mr. Thomas Hammond, 139, Corporation Street; Glasgow, Mr. J. K. Millar, 107, Hope Street; Exeter, Mr. John Cardale, 81, Queen Street; Belfast, Mr. J. Webster, 17-19, Victoria Street; York, Mr. L. Burnett, 16, Parliament Street; Aberdeen, Mr. G. Grame Archibald, 116, Union Street; Dublin, Mr. E. O'Kelly, 44, Dawson Street; Peterborough, Mr. F. O. Chapman, Long Causeway; Carlisle, Mr. E. McLeod, 54, Castle Street; Usk (Monmouthshire), Mr. S. W. Pugh, Adrian Court.

The above-mentioned Canadian Government Agents supply letters of introduction to the Government Officials in Canada, which intending settlers will find useful. A collection of the natural products and manufactures of Canada can be seen at the Imperial Institute, South Kensington, London, S.W.; and specimens of grain of all kinds from the Government Experimental Farms are on view at the Emigration Offices of the Canadian Government, 11, 12, and 13, Charing Cross, W.C., and the Government branch offices.

We may here call attention to the Hon. Rupert Guinness's Emigration Training Farm, Woking Village, Surrey.

Mr. Guinness has established a farm in England, at the above address, where men contemplating emigration may be given an opportunity of ascertaining whether they are capable of leading a farmer's life, and if such life is to their liking. So far as is possible in a limited time, a certain amount of practical experience under the supervision of a Canadian Expert can be there obtained, which will, undoubtedly, be of great value to any man afterwards working his own land, or (following the advice so

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frequently given) working as a hired man for a probationary year with a colonial farmer before starting on his own account. By this means those who find physical labour on a farm distasteful, or more than they are capable of, will be saved the expense and disappointment they otherwise might have incurred had they left their homes and crossed the ocean without this experience.

The farm, as atated, is in Surrey, two and a half miles from Woking, and comprises about 500 acres of land. It is under the superintendence of a Manager, who is a Graduate of the Ontario Agricultural College, and has had eight years' practical farming experience in Canada. Canadian methods and ideas of farm work will, therefore, be ensured as far as English conditions will allow during the period of training on the Farm, which will not exceed six weeks.

FEES, ETC.

Every candidate will be expected to deposit with the Hon. Rupert Guinness enough money to pay his passage to his destination in whatever country he intends to go to, by whichever class he intends to travel, plus the minimum amount required by the Immigration Department to be in the possession of the immigrant before permission is granted by the authorities to land in that country. This amount will, of course, vary with the destination, as below :

CANADA.				£	s.	d.
Ocean fare, second cabin	...	...	(about)	10	0	0
Immigration fee	...	...	...	5	0	0
Rail fare from port of landing to Toronto	...			1	15	5
				17	5	5
Rail fare from port of landing to Winnipeg	...			3	15	0
„	„	„	Calgary	5	10	0
„	„	„	Vancouver	8	3	7

AUSTRALIA.

Ocean fare	(about)	17	0	0
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NEW ZEALAND.

Ocean fare (about)	18	0	0
Immigration fee	10	0	0
				<hr/>		
				28	0	0

In cases where the Governments have granted assisted passages, the amount for such passages will be sufficient.

Board will be charged for as mentioned below, and must be paid two weeks in advance. No money so advanced for board will be refunded if pupils leave before two weeks, unless one week's clear notice is given. If after two weeks a pupil is unable for any reason to complete his term, any balance in his favour will be refunded, provided one week's clear notice of leaving is given.

The charge for board will be as follows (it will cover board and lodging, laundry, papers and petty breakages, and must be paid two weeks in advance): For the first fortnight, 25s. per week; for the second fortnight, £1 per week; and for any subsequent period, 15s. weekly.

Total payment at the time of entry, therefore, will be fare and immigration fee according to destination as above, in addition to the first two weeks' board of £2 10s., and further payments will be £2 at the end of the first two weeks, and £1 10s. at the end of the second two weeks.

The 'necessaries of life, except fuel and clothing, can usually be bought more cheaply than in England, but luxuries are dearer. House-rent, clothing, fuel, servants, mean a heavier expenditure than in England, but a single man can secure board and lodging at a fairly cheap rate.

Fares from Liverpool or Glasgow to Quebec are liable to change. At present they may be allowed for as follows: Second class, from £9 10s.; steerage, from £6. This fare includes a free allowance of luggage of 10 cubic feet for each steerage passenger, with proportionately larger allowance for saloon and second-class passengers.

The following suggestions have been issued to Headmasters by the Headmasters' Conference, and may be of interest to parents who have sons at the Public Schools:

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1. Boys intending to emigrate to Canada should be introduced by the Headmaster to Mr. W. A. Evans, Secretary to the Headmasters' Conference, 12, King's Bench Walk, Temple, E.C., to whom should be sent the Form of Introduction filled up according to the accompanying directions.

2. Intending emigrants should purchase the *Handbook to Canada* (price 3d.), issued by the Emigrants' Information Office, 34, Broadway, S.W.

3. It should be carefully explained to those boys intending to farm in Canada (a) that, in the first instance, they must be prepared to work as ordinary day labourers under a farmer for about two years before taking up land of their own; (b) that if they wish to become students at an Agricultural College they must have done a year's practical work on a farm in Canada before they can enter as students.

4. It is suggested that members of the Conference should place in their school libraries—

(1) The map of Canada issued by the Canadian Pacific Railway Company, Cockspur Street, S.W.

(2) The weekly newspaper, *Canada*, and the *Empire Review*.

The openings in the liberal professions in Canada are not so numerous as to lead us to encourage Public School men to go out with that particular end in view, and this remark applies with special force to the scholastic, medical, and legal professions. The system of High School and University education in Canada has been elaborated on such efficient and economical lines that young men of any ability, irrespective of class, find no difficulty in enjoying the very best opportunities of education that the country affords. For those, however, of our readers who propose to follow mechanical mining, or electrical engineering as a profession, it may be useful for them to know that at McGill University, Montreal, and at Toronto—notably at the former—the Faculty of Applied Science is supplied with an equipment on the most comprehensive and magnificent scale, which challenges comparison elsewhere. The expense of obtaining the necessary training is quite nominal, and does not amount probably to one-third of that required by an undergraduate at Oxford or Cambridge. The whole trend of the progress of Canada should have the effect of providing occupation for a large body of gentlemen of this class, who have received their special training in that country, and have become identified with its interests.

We now append a few particulars about the individual Provinces of the Dominion.

QUEBEC.—The eastern townships, generally speaking, are the best for English settlers. Montreal, Quebec, and the United States provide markets close at hand, and land is cheap.

Farming is the principal industry, but dairying has become of late very important, and there is a new Dairy School at St. Hyacinthe, where lessons are given. There are now about 1,900 cheese factories and creameries in the Province.

A knowledge of French will be valuable to a settler in this Colony.

The Macdonald College of Agriculture is situated at St. Anne de Bellevue, twenty-one miles west of Montreal. It is mainly intended for residents in the Province, but others may be admitted.

ONTARIO.—Farming is the main industry. England and the United States are excellent markets, and communications by road, rail, and water are good. The export of live-stock, dairy produce, and fruit from Ontario is becoming much more important than that of cereals, and mixed farming is much more profitable than wheat-growing only.

The "Niagara Fruit District" of Ontario is sometimes called "The Garden of Canada," and produces immense quantities of fruit. There is a special department of horticulture in the Ontario Agricultural College at Guelph. The calendar of this well-equipped Institution should be consulted. Intending students must have had a year's experience of farming in Canada, and pass an entrance examination in elementary subjects. Each pupil

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receives wages according to the work he does on the farm, and the net cost of board and tuition need not exceed £10 to £20 a year.

NOVA SCOTIA AND PRINCE EDWARD ISLAND.—Information about Prince Edward Island may be obtained from Mr. Harrison Watson, 73, Basinghall Street, London, E.C.

Nova Scotia, the most easterly of the Maritime Provinces, offers special advantages to settlers possessed of small capital. The climate is temperate, healthy, and invigorating, and, owing to the proximity of the sea, is not subject to extremes of temperature, either in summer or winter. The soil is rich, fertile, and easy to work, and vegetation is rapid. The country is well wooded, and has great variety of scenery. Rivers and lakes are found in profusion, and afford plenty of water power. Good roads and railways intersect the country. In consequence of the indentations of the coast-line, no part of the province is more than thirty miles from navigable waters.

Fruit-growing, farming, dairying, stock-raising are all carried on with success. The Annapolis and Cornwallis valleys are celebrated for their orchards, Nova Scotia apples having a world-wide reputation for quality. The improvement of the cold storage arrangements on ships, and the increasing demand in Canada for jam, should further enhance the value of the fruit-growing industry. At Truro an Agricultural College is established, where practical information may be acquired free, the only cost to the student being his board, about 10s. to 12s. per week. The same remarks apply to the Horticultural College at Wolfville. Creameries are established at various parts of the Province for the manufacture of butter and cheese,

and receive Government encouragement. Improved lands with houses (that is, farms) may be purchased in most districts at low rates according to locality and size. There is an excellent system of free education, and the conditions of life are extremely social. Living is cheap. Sport is plentiful, the rivers and lakes abounding in fish, and the woods with game, both large and small.

Nova Scotia possesses one of the finest sea fisheries in the world, and contributes a large percentage of the total yield of the Dominion.

The minerals found in the Province comprise coal, iron ore, gold, copper, lead, silver, tin, etc. ; limestone, gypsum.

For further information, apply to Mr. John Howard, Agent - General for Nova Scotia, 57A, Pall Mall, London, S.W.

No one should attempt farming, either on improved farms or on free grant lands, unless he has some capital beyond the price of the land.

NEW BRUNSWICK is the largest of the wonderfully fertile Maritime Provinces, which are very much nearer Great Britain than any other important food-producing area of the Empire.

All Western produce by Canadian route to England must pass through Maritime Provinces, at least in winter. Situated only 2,000 miles from England, it is nearer than any other important food-producing area of the Empire.

With the exception of west and north-west of New Brunswick, connecting with United States and rest of Canada, it is almost surrounded by sea. To the north and east lies the Gulf of St. Lawrence. On the south it is washed by the wonderful Bay of Fundy, and the sea fisheries are amongst the greatest in the world.

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The summers and winters alike characteristically clear, and with much brilliant sunshine. Though the rainfall is over 40 inches per annum, there is nearly twice as many hours' bright sunshine in the year as in Great Britain. The fruit blossoms are never once injured by late frosts.

The coast-line of New Brunswick nearly 600 miles in length, with many fine bays and harbours. The surface is much diversified, from flat dykelands to mountains nearly 3,000 feet in height. There is a perfect network of internal waterways, rivers, streams, and lakes. St. John, the largest river, is over 400 miles long.

The central and northern portion of New Brunswick are covered with heavy forest. Much of the woodland may be classed as good agricultural land.

There are good highways supported by the Government and people at small cost. Steamers run extensively on internal waterways. New Brunswick has more miles of railway per head of population than any country in the world.

Crown lands, excellent quality, but not cleared or improved, may be bought outright for about 4s. per acre. Good farming land, cultivated, on railway, may be bought outright for about £2 per acre. Intervale land, £3. Dykeland from £15 to £30 per acre. All taxes per annum on £500 farm about £3.

Mr. A. Bowder, 37, Southampton Street, Strand, London, W.C., will furnish illustrated pamphlets, hand-book, and any information relating to the Province, and also illustrated prospectus of the Government Training Farm, designed especially for boys from the Public Schools of the United Kingdom.

MANITOBA, ALBERTA, AND SASKATCHEWAN.—
Youths emigrating to Manitoba, Alberta, and Saskatche-

wan will receive every assistance from the Immigration Office in Winnipeg.

Capital required for a Ranch.—The following estimates may be useful, but they are very rough and variable: (1) The capital required (a) per 500 head of cattle is about £2,500; (b) per 1,000 head of sheep about £800; (c) per 100 head of horses about £1,000. (2) Ten acres will carry one horse or one head of cattle, and five acres one sheep (but more in North Alberta). (3) Two cowboys will look after 1,000 head of cattle and one shepherd after 2,000 sheep. (4) Range cattle cost per head £4 to £7; horses, £7 to £15; sheep, 12s to 18s. (5) Outside the range of the chinooks (warm winds) stock must be stalled all the winter; on the Alberta ranches stock winter out without danger; within the range of these winds, in ordinary winters, about 200 tons of hay are required per 500 cattle, 50 tons per 1,000 sheep, and 20 tons per 100 horses; hay costs from 12s. to 24s. a ton and upwards. (6) Cowboys' wages vary from £4 to £8 a month, with food and horses.

Ranching, of course, can be profitably conducted on a smaller scale; but for this purpose a smaller capital than £500 would not be desirable. With this sum, however, the settler could buy a mixed herd of 60 head, consisting of 20 yearlings, 20 two-year-olds, and 20 cows in calf, at an average of \$20 each, or a herd of 50 cows at \$30. The latter purchase is perhaps the better of the two, and would cost £300. The rest of the money would be used for his free homestead farm of 160 acres, his house, food, implements, etc. The cattle have free grazing on the unoccupied land outside the homestead farm.

The principal industries in Manitoba and the North-West are farming and stock-raising. For the manner in

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which free grants of land are made to settlers, consult the general remarks upon Canada in this chapter. These grants of land are not always procurable near the railway or in long-settled districts. Anyone wishing to take up land in such parts must purchase or rent it. The average size of a farm is 160 acres, taxes on which average \$14 to \$16 a year; 40 acres would be enough for a man to handle with not more than £100 capital, and with no grown-up children to help him. There is no clearing to be done as in the older Provinces; a pair of oxen will break one acre in a day, at a cost of \$3 to \$5; back setting costs \$2 an acre. Owing to the great scarcity of natural timber, trees are being planted by some of the farmers; these are given to farmers gratis at the experimental farms; they are useful for shade and shelter. In dry parts of the North-West Territories irrigation is being successfully resorted to. The soil is for the most part a rich black loam, resting on a deep clay subsoil; but there is also inferior land. The land is cropped with wheat many years in succession. Very few grain crops besides wheat, oats, barley, and flax are grown. Mixed farming is much more likely to be profitable than wheat-growing only, and is being rapidly adopted. It must not be forgotten that the crops are occasionally liable to damage by sudden and severe frosts. Increasing railway facilities will throw open much new grain-growing land in the North-Western Territories at the expense of land now used by ranchers. The number of central cheese factories and creameries in operation in the new settlements in Manitoba, Alberta, and Saskatchewan steadily increases, of which settlers eagerly take advantage; but the demand for dairy products is still much greater than the supply. Poultry-raising is also carried on, but is still not up to the demand.

COLONIAL OPENINGS [BRITISH COLUMBIA

Manitoba, Alberta, and Saskatchewan offer good openings to farmers with capital. Land is fertile and cheap, and the climate, though one of extremes, is very dry and healthy. The summer mean is 65° to 70° ; the highest temperature in summer is 100° , and the lowest in winter is 30° to 50° below zero; but such extremes of cold and heat are rare. Life is rougher and more isolated than in Ontario, and there are fewer social advantages. Churches and schools are scarce in newer districts, but are numerous along the lines of railway and in the larger settlements.

There is a School of Agriculture at High River, Alberta, a few miles south of Calgary, where students are taught farming, stock-raising, etc.; students are admitted between seventeen and twenty-one years, and preference is given to those who have been at one of the English Public Schools. Expenses for board and tuition are about £100 per annum, but students are paid according to their work. Apply to the Director.

BRITISH COLUMBIA. — The Province of British Columbia offers many openings to active and healthy youths with capital. The principal industries are agriculture, fruit-culture, mining, fish-canning, and the lumber trade. Many parts are still difficult of access and almost unexplored. The best method for anyone embarking on agriculture with a capital of from £500 to £1,000 would be to work for a year or two on a farm, and then, when he has to some extent learnt the business, buy a small improved farm for himself. He should on no account pay a premium as pupil. The mining industry of the Colony has recently made immense progress, and probably offers excellent chances to mining engineers and capitalists proposing to engage in it. In this connection the current

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Professional Handbook of the Emigrants' Information Office should be consulted.

The climate in certain districts is very similar to that of England, but, of course, depends to a great extent on altitude, and varies considerably. In the interior and higher lands the summers are hot and dry, and the winters not so severe as those in Eastern Canada. Near the coast and in Vancouver Island the summers are very pleasant, and the winters are mild, with a good deal of wind and rain and occasional snow.

Dairy farming has, of late, received increased attention. A farmer could make a good start on fifty acres of land.

CEYLON.—The area under tea is very large, for tea flourishes from a few feet above sea-level to an elevation of 7,000 feet. The annual salaries of Europeans on tea-estates run from 1,000 rupees for assistants of twelve to eighteen months' experience, to 3,000 rupees and 5,000 rupees for men of considerable experience, but at the present time it is not desirable for men to go to the island unless they have a distinct prospect of employment, or can command capital to invest by buying up a plantation after gaining experience.

AUSTRALASIA.—By the Commonwealth of Australia Constitution Act, 1900, New South Wales, Victoria, South Australia, Queensland, Western Australia, and Tasmania became States constituting the Federal Commonwealth of Australia. New Zealand remains outside the Federation.

For detailed information with regard to Australasia, the handbooks of the Emigrants' Information Office should be consulted, as well as the official publications issued by the High Commissioner for Australia.

COLONIAL OPENINGS [NEW SOUTH WALES

In cases where such aid is required several State Governments are ready to allow reduced second-class and third-class passages to suitable applicants.

Particulars with regard to these reduced passages may be obtained from the Agents-General in London of each individual State. The address of the Agent-General of each State is given at the end of the section devoted to its description.

Generally speaking, there is a demand everywhere in Australasia for fruit-growers and farmers of all kinds with a capital of say £300, also for competent men accustomed to the use of agricultural machinery, whereas clerks and shopmen are not encouraged by the Governments to emigrate.

NEW SOUTH WALES, *the Parent Australian State*.--- We are indebted for the brief summary that follows to the courtesy of the Agent-General for New South Wales :

To the boy fresh from a Public School there is scarcely any country in the world possessing greater attractions than New South Wales, especially if he has a fondness for an open-air life in a good healthy climate. The cost of living is small, and, even though at first one may have to "rough it" a little, that in itself is no hardship to one with a store of good health and British vitality. A new arrival is at once struck by the lack of strangeness in the appearance of the cities or townships of the State, or in the manners and customs of the residents. New South Wales, apart from its privilege of self-government, is, in fact, merely a huge county, or shire, situated several thousand miles away from the Mother Country.

With energy, enterprise, and a little capital, combined with patience and perseverance, there is no reason why

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success should not attend the young settler's career. While the professions, as a rule, are somewhat overcrowded, there are good openings in connection with pastoral, agricultural, and mining pursuits.

Sheep-farming is, in normal seasons, certainly one of the most profitable occupations in the State, and is a leading factor in its increasing prosperity. It may be pointed out, however, that the new arrival should not embark upon sheep-farming as a career unless he has a certain amount of capital, while he who would succeed must be prepared to accept little or no profit over and above expenses during the first two or three years. To those who are possessed of the necessary means and experience, the "homestead lease system" offers a large field of enterprise in what is known as the Western Division, in which large tracts, consisting of vacant lands, or the resumed halves of the old runs, are open to lease in blocks of from 2,560 acres to 10,240 acres, called homestead leases, at a minimum rental of one penny per acre. The conditions are simple—fencing round the outside boundaries of the land within two years, and residence for at least six months of each year during the first five years of the lease.

Modern agriculture being divided into many branches, the new arrival has to decide whether he will take up wheat and sheep-farming, dairying, or orcharding, etc. In this matter he should take the advice of the Assistant Superintendent of Immigration for New South Wales, Melbourne Place, Strand, W.C. Generally speaking, the Eastern Division of the State, embracing the whole of that portion facing the ocean, and covering an area of about 60,450,000 acres, is the most suitable for agricultural and dairy-farming purposes; while the Central Division, comprising an area of 55,460,000 acres, and situate between

the Eastern Division and the immense tracts of grazing land forming the Western Division, is admirably adapted for mixed farming.

There is an unlimited field for the enterprise of those who are acquainted with the methods of vine culture. Dairy-farming is another very important industry. Perhaps the best opportunities now offered by the State, however, are upon the new irrigated areas along the Murrumbidgee River. Here the Government has made a wide expanse of fertile land available in irrigated farms, which are offered upon very attractive terms. The tenure is perpetual leasehold, and about £500 is required for a satisfactory start.

To acquire the necessary experience a good method to adopt is to undergo a course of training at the Hawkesbury Agricultural College and Experimental Farm at Richmond, New South Wales, where, under Government auspices, the science of agriculture, and various other sciences connected therewith, are taught by a competent staff. The period of study at this College extends over two years, and every candidate for admission must be over sixteen and under twenty-five years of age. A fee of about £40 for the first year, £30 the second year, and £20 the third year, payable half-yearly in advance, is charged for the maintenance and education of each resident student. The course includes practical work upon the farm, and lasts from one to three years. Students from England, especially those with enough capital to enable them to take up land afterwards, are admitted when there is room. A copy of the Prospectus of the College, containing particulars of the rules and regulations of the College, subjects of study, etc., may be obtained from the Assistant Superintendent of Immigration in London. It may be stated broadly, however,

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that the time spent at this Institution 'will enable the student to become a thoroughly practical farmer and agriculturist on lines specially adapted for the State.

Special attention is directed to the offer which New South Wales is making to lads of all classes between the ages of sixteen and twenty years. These boys are granted greatly reduced steamship passages, and when they reach Sydney they can either go at once to guaranteed employment with farmers who will pay them a good wage, give them board and lodging, and at the same time teach them various branches of farming; or they can proceed to one of the Government Agricultural Farms or Colleges where the State, in co-operation with what is known as the Dreadnought Fund, will give them a year's free tuition in agriculture and livestock-raising, in addition to free maintenance. In short, New South Wales is making a special feature of the immigration of growing lads. The Assistant Superintendent of Immigration will be pleased at any time to answer inquiries about the openings in New South Wales, and give full information respecting prospects, the cost of living, climate, etc. Handbooks and maps will also be forwarded upon application.

Fares by British steamer from England to Sydney—Third class, £18 to £30; second class, from £42.

The address of the Agent-General for New South Wales is 123 and 125, Cannon Street, London, E.C.

QUEENSLAND.—There are numerous openings available for young men with a little capital as sugar-growers, dairy farmers, fruit-growers, tobacco planters, vine-growers, sheep and cattle farmers, and general farmers.

Capital required—sugar-growers, about £200 to £400; dairymen, about £200 to £300; sheep and cattle farmers,

£3,000 to £5,000. The Under Secretary for Lands would advise a young man with capital where he could find a station, plantation, or farm on which he could learn his business. There are no salaried positions available. The circular of the Emigrants' Information Office states that there are good openings for small farmers possessed of local experience with a capital of not less than £50. The price of living is, on the whole, moderate, compared with the average wages.

Darling Downs, in the South, is the only district that can fairly be said to be within the temperate zone; the climate here is delightful nearly the whole year round, and the elevation makes it less enervating than that in other parts of the State. The other parts of Southern Queensland, as far north as a line drawn westward from Rockhampton, are semi-tropical; north of Rockhampton is the torrid zone.

A grazing farm may consist of any area up to 60,000 acres; its rent from $\frac{1}{2}$ d. to 2d. per acre per annum, and it is held by the tenant under a lease from the Crown for a term not exceeding twenty-eight years. The average rental of farms is about $1\frac{1}{2}$ d. per acre, so that the annual rent of a grazing farm of 20,000 acres would be £120; the survey fee, covering the cost incurred by the Crown in surveying the land, about £60, to be paid by the tenant in five yearly instalments. On this area the selector could depasture about 7,000 sheep. The capital required, covering rent, survey fee, fencing improvements, and stock, would be about £8,000. Financial assistance can be obtained from the State Agricultural Bank on very easy terms of repayment.

In all parts of Queensland farmers must adapt their methods to the climate and soil. In choosing land farmers

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should make sure of three things—viz., a good soil, permanent water, and an accessible market.

Clearing moderately timbered land costs £5 an acre ; but scrub can be felled and burnt off for 30s. and upwards per acre.

The capital required to work a farm is £100 to £150 per 100 acres, besides the price of the land and house, and £100 for stock and implements; near Townsville a man should have £200 for 60 acres.

The largest quantities of cheese, butter, and of bacon are supplied on or near the Darling Downs.

Sugar is the product which is perhaps more suitable than any other for cultivation in the State, and its production is the most satisfactory of all agricultural industries. A settler before he buys land should work on a farm for twelve months or so to learn the business.

The State is rich in minerals of all kinds, and as irrigation and railway work progress, the mineral industry will doubtless be largely developed. Goldfields are scattered all over the eastern and northern parts of the State, and the Government sets apart a sum of £2,000 for payments for new discoveries.

Fares to Brisbane are from £19, third class ; and from £44, second class. The address of the Agent-General for Queensland is 409, Strand, London, W.C.

VICTORIA.—Victoria has sound attractions at the present time for young men who wish to engage in the farm industry. There are especially good openings upon the irrigated areas. The State Government has expended many millions sterling upon the construction of weirs and other waterworks, and in the purchase of irrigable lands in large areas. The price for this irrigated land ranges from £12 to £20 an acre. These lands have been subdivided

into farms of suitable areas, and are now offered to settlers upon remarkably easy terms of purchase. For instance, possession can be secured for a cash deposit of 3 per cent., and the balance paid off over three and a half years. In addition to this, the Government also advances money towards the construction upon houses and other improvements. This policy has proved very popular both with young Australians and with young settlers from the United Kingdom. The irrigated areas are more attractive than other farming districts, because they are all well served by railways and substantial townships, while the small farms mean many neighbours and a good social life.

In addition to what is offered to settlers, Victoria holds out special inducements to lads between the ages of sixteen and twenty years, who wish to receive fair wages while they are being taught farming. Wages, of course, are quickly increased as the boys learn their work. Large numbers of these lads are to be supplied with capital by their parents when they are a little older. Then the Government Agricultural Colleges reserve some accommodation each year for lads from the United Kingdom. The fees inclusive for the first year are £34 5s.; the second, £29 5s.; and the third, £24 5s. A three-years' course thoroughly equips young men for all branches of agriculture and livestock-raising. The ordinary fare to Victoria is from £18 upwards. The address of the Agent-General for Victoria is 142, Queen Victoria Street, London, E.C. The Assistant-Superintendent of Immigration, Melbourne Place, Strand, will also be pleased to give information and advice to intending settlers.

SOUTH AUSTRALIA.—It is more than seven times as large as the United Kingdom, but its population is only

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about 433,000. The chief products are wheat, wool, copper, gold, fruits, and wine. For farmers with capital the prospects are generally fair, but they vary from season to season owing to the great uncertainty of the rainfall. Fruit-growing and wine-making offer to men of capital and experience steadier prospects than ordinary farming. Fruit-growers should have a capital of from £500 to £1,000. There seem to be excellent prospects for dairy farmers. A trade with England is being opened up by means of cool chambers on the mail steamers, which is capable of unlimited expansion. For price of land, and for farming, fruit-growing, etc., see the *South Australia Handbook*, issued by the Emigrants' Information Office, price 1d., with map.

There is an Agricultural College situated on the Government Experimental Farm at Roseworthy, about thirty miles from Adelaide. The fees are about £30 a year, including everything, and the course one of three years.

Fares from England to Adelaide—Third class, £18 to £32; second class from £42. The address of the Agent-General for South Australia is 85, Gracechurch Street, London, E.C.

WESTERN AUSTRALIA.—There is a good opening for market gardeners, fruit-growers, and farmers, with a capital of £300 and upwards, as fruits and vegetables sell at high prices; but all persons should get experience of colonial farming before taking up land.

There are Experimental or State Farms at Narrogin, in the Williams district, at Hamel, and Brunswick on the South-Western Railway, seventy miles south of Perth, and one called the Nangeenan Farm on the Eastern Gold-

COLONIAL OPENINGS [WESTERN AUSTRALIA

fields Railway.' Students not less than fourteen years old are admitted at the Narrogin Farm on payment of £25 a year; the teaching comprises a practical and theoretical course of agriculture, and students are required to do physical work in all branches of farm labour. The Government provides board and room. Application should be made to the Director of Agriculture, Perth.

The soil and climate of the southern portion of the State are specially suitable for mixed farming and fruit-growing. The agricultural industry has been stimulated by the development of the goldfields, and the pastoral industry is now in a good condition. For full particulars regarding emigration and land selection, write to the Agent-General for Western Australia in London, and for price of land, farming, fruit-growing, etc., see the *Western Australia Handbook*, issued by the Emigrants' Information Office, price 1d., with map.

The cost of living is not high, but house rents in the large towns are. Clothing is but little dearer than at home.

Under the Homesteads Sections of the Land Act, free grants of one hundred and sixty acres are made to settlers on conditions of residence and cultivation.

Fares from England to Fremantle or Albany—Third class, £18 to £32; second class from £42.

The address of the Agent-General for Western Australia is 15, Victoria Street, London, S.W.

TASMANIA.—The delightful climate of Tasmania, its beautiful hills and valleys, its abundance of water, its flowers and hedge-rows, would seem to offer more attractions to British settlers than the hot summers, the long

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droughts, and endless plains of many parts of Australia. There is perhaps no Colony which offers so many advantages to a man of small income, who is in search of a comfortable home, an equable and temperate climate, and pleasant society. Though the manufactories are still very small, capitalists will find continual opportunities for investing in fresh undertakings. There is no such poverty there as in England, the necessities of life are cheap, wages are high, and a man with a family will often have a much better chance of placing out his children well than he would have at home. The gradual development of the mining industry has been the chief feature of the last few years, and miners have been well employed in consequence. Farmers with a capital of not less than £400, which would be required for buying and stocking the land, erection of residence, etc., are likely to succeed in Tasmania; but they should not invest their capital before they have gained experience of the State. There is little opening for professional men. Some of the Crown Lands are heavily timbered and expensive to clear. In general farming, such as cereals, hops, or stock-raising, dairy farming, and breeding of stud sheep, there would seem to be good openings for English farmers. The soil, climate, and herbage are excellent, land is cheap, and droughts are rare; but owing to the development of other industries, certain quantities of agricultural and pastoral produce are at present imported. Fruit farming, however, is probably the most profitable industry of all.

Fares to Hobart—Third class, £17 to £30; second class, £38 to £43.

Further information with regard to Tasmania may be obtained from the Agent-General for Tasmania, 56, Victoria Street, London, S.W.

COLONIAL OPENINGS [NEW ZEALAND

NEW ZEALAND.—The great length of the Colony from north to south secures great diversity of climate and products. Long periods of drought are unknown in New Zealand. The climate is like that of Great Britain, only warmer and more equable. • The climate on the west coast in both islands is more equable than on the east, but the rainfall is greater. The whole country is very healthy, and the death-rate is exceptionally low.

The total exports for 1913 amounted to £23,043,589. The principal products were: wool, £8,065,945; butter, £2,056,615; cheese, £1,859,179; frozen lamb, £1,825,342; frozen mutton, £1,500,728, and gold, £1,305,217.

Gold Mining in the Dominion.—Most of the gold now comes from quartz mines and not from alluvial workings as in the early period of mining. A large amount of dredging for gold is done, especially on the Clutha River in Otago. The quantity of gold exported in 1911 amounted to 481,909 ounces.

The total quantity of gold entered for export from 1857 to 1911 was 20,164,988 ounces, valued at £79,253,913.

Bee-Farming.—In order to encourage bee-farming in the Dominion, model apiaries have been established at Ruakina and Waerenga in charge of expert bee-keepers, whose duties include the instruction of persons desirous of becoming students of bee-culture. At the census of 1911 it was ascertained that there were at that time 11,002 bee-keepers and 71,584 hives in New Zealand. The output of honey for the previous year was stated at 1,457,272 pounds, and of wax at 28,061. Fruit-growing and poultry farming work well with bee-keeping.

The Public (Primary) Schools are free, and the instruction imparted in them is secular and compulsory for

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children between the ages of seven and fourteen. There are also several Secondary Schools and Colleges, which are mainly supported by endowments and pupils' fees; the tuition fees for day scholars range from about £6 6s. to £14 a year for boys or girls; the fees for board, exclusive of tuition, are from £40 to £51 a year. There are also numerous Technical Schools, Private Schools, and a University of New Zealand which has power to confer degrees. There is an Agricultural College at Lincoln, near Christchurch, to which is attached a farm of seven hundred and eighty acres. The College is carried on, as nearly as possible, on economic principles, and in illustration of the teaching of the lecture rooms, the students taking part in the regular daily work. Schools of Mines have also been established at Thames, Waihi, Reefton, Dunedin, Nelson, and elsewhere.

The social conditions of life are much the same as at home. There are the usual British sports—football, cricket, lawn tennis, boating, etc. The grandeur of much of the scenery of the islands, and the wonders of the volcanic districts invite those who have leisure to make tours. There is Alpine climbing to be obtained amongst the peaks and glaciers of the South Island. There is also plenty of sport to be had, such as fishing, shooting, and deer-stalking. The cost of living in the Dominion, speaking generally, is lower, as compared to earnings than it is in Great Britain. Clothing and boots, however, are dearer than they are in the United Kingdom.

There are in the two islands, taken together, and exclusive of native lands, many millions of acres of Crown lands still remaining for settlement. They are mostly covered with forest, which costs from 15s. to 30s. per acre to clear, but the great size of the trees and the rich-

ness of the vegetation prove the fertility of the soil. Some of the open land near the rivers and lakes consist of swampy flats covered with New Zealand flax and Tussack grass, which are costly to drain, but would, in all probability, give valuable returns.

New Zealand is, first, a pastoral, and, secondly, an agricultural country. Sown grasses are grown almost everywhere, more especially in the west and south of the North Island. The great capacity of the land for receiving these grasses, and the facility with which much of the bush can be burnt down, sown over without previous ploughing, and then in a few weeks become converted into good grazing land, has made the Colony a wool and meat producing country. Wool is the staple product. Almost every farmer does something in raising stock, and the number of dairy farms in connection with arable is large. Owing to the genial climate, stock, at least in the North Island, need not be housed in winter. The grass land is nearly equally divided between the two islands; but, while in the North Island by far the greater part has been laid down in grasses without previous ploughing, in the South most of it has had to be ploughed first. This is accounted for by there being more bush in the North. On the other hand, although the Colony is mainly pastoral, it is still very largely agricultural, and produces large quantities of wheat, oats, barley, and, in Auckland, maize; the yield per acre is larger than in any other Australasian Colony. There is much good agricultural land in both islands, but, unlike the grass-land, it is not equally divided, the South having more than eight times as many acres of agricultural land as the North.

Farming, including the keeping of livestock, is the most important industry in New Zealand. The soil is very

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fertile, and the climate excellent. Canterbury and Otago are the most important Provinces from an agricultural point of view. The price of improved land greatly varies, according to its quality and the improvements upon it. Roughly speaking, agricultural and grazing land may be bought at from £2 to £40 per acre freehold, or 5s. to 40s. per acre per annum leasehold.

Most of the best unimproved land requires clearing, which involves great labour and expense. A man, therefore, with sufficient capital should buy improved land. The cost of clearing greatly varies, according to the heaviness of the timber. Speaking generally, it may be burnt off, sufficiently to pasture sheep on, for about 30s. an acre, and many contractors will do it for less. If the stumps of the trees are removed, so as to make the land suitable for ordinary ploughing, the cost will be more. Open fern land, as in the Province of Auckland, and elsewhere, can be burnt off for a few shillings an acre ; as a rule it has a light soil.

The capital required for working a farm, exclusive of the price of the land, may be put down at not less than 30s. to 60s. an acre ; but a man who is content to rough it, and work part of his time for others at wages, may begin on less.

Fruit is now being successfully exported to London ; the trade in fresh, tinned, and preserved fruit is capable of very great expansion. There are about 26,000 acres of orchards, nearly half of which are in the Province of Auckland. Fruit grows well from one end of New Zealand to the other ; but the subtropical kinds—such as oranges, lemons, limes, grapes, and olives—are for the most part limited to the warmer climate of the Province of Auckland ; even bananas grow in the far north.

COLONIAL OPENINGS [NEW ZEALAND]

The export of phormium (New Zealand hemp) has recently assumed large proportions, the quantity of hemp exported in 1913 being 21,567 tons, to the value of £483,353. There is also an increasing export trade in butter and cheese from Wellington, Taranaki, Otago, and other places. The Government of New Zealand is actively interesting itself in this industry.

The returns of the exports show the great advance of the frozen meat trade, mainly mutton, which has only been in existence since 1882. With the single exception of wool, it is now the largest article of export. The carcasses are sent over whole. It is calculated that sheep can be profitably raised to sell at the London docks at 3½d. per pound. Canterbury supplies much the largest number of frozen sheep, then Wellington, Hawke's Bay, and Otago. Two-thirds of the frozen beef come from Wellington and Taranaki; but the quantity of exported beef is very small as compared with that of mutton. There are numerous meat-freezing works in the Colony.

The climate, pastures, and plentiful water-supply make New Zealand, especially Taranaki and the west coast of the North Island, and Otago in the South Island, specially adapted to the manufacture of butter and cheese. Great attention is now being paid to this industry, and the quality both of cheese and butter has greatly improved.

The fine climate, the richness of much of the soil, the high average yield of wheat, the fact that New Zealand stands first of all the Colonies in its sheep-bearing capacity, and that its mutton commands the highest price in the English market, all tend to make the Colony a promising field for farmers and agriculturists generally, and to inspire the belief that there cannot be much doubt as to the future of those who are prepared for steady work, some

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self-denial, and "roughing it" a little during their first years as colonists.

Farmers and others with a little money will find a good opening, if they are prudent, and do not mind working for wages while they are looking about them, and gaining information as to the country and its capabilities. It is far better for a man, however much he may know of English farming, to work for wages on a farm in the Colony for at least twelve months until a reasonable amount of local experience has been gained, justifying the investment of capital, than to take up land immediately on arrival in the Colony. A man with a small capital who intends to succeed as a farmer should also remember that he must himself work hard upon the land; that, although it is often advantageous to buy land from colonists instead of taking up Crown lands, he must not pay too high a price for it, nor be over-anxious to extend his farm as soon as he finds he is succeeding. The most prosperous branches of farming are sheep-breeding for the wool and the frozen meat trade and dairy farming; the production of cereals is sometimes less profitable, owing to the competition of other countries. Lands purchased from settlers are generally accessible and more or less cleared and drained, whereas ordinary Crown lands are for the most part not so easy of access, and require to be cleared, fenced, etc. On the other hand, roads are being everywhere made, the climate is good, and the land once cleared speedily gives good returns. For a farmer with a capital of £500 to £1,000 the North Island is by many considered preferable to the South; land is dearer, but it is better, though there is not so much of it.

[Portions of the above summary dealing with New Zealand appear in the *Public School Year-Book*, 1914, and are reproduced here, with some alteration, by the courtesy of the Editor.]

COLONIAL OPENINGS [SOUTH AFRICA

Fares from England to Dunedin, Christchurch, Wellington, or Auckland, and other ports—Third class, £18 to £23; second class, £38 to £43. The address of the High Commissioner for New Zealand is 13, Victoria Street, London, S.W.

SOUTH AFRICA.—The Union of South Africa was constituted under the South Africa Act, 1909, passed by the Parliament of the United Kingdom on September 20 of that year. In terms of that Act, the self-governing colonies of the Cape of Good Hope, Natal, the Transvaal, and the Orange River Colony, were united on May 31, 1910, in a legislative Union under one Government, under the name of the Union of South Africa, those colonies becoming original provinces of the Union under the names of the Cape of Good Hope, Natal, the Transvaal, and the Orange Free State respectively. The total area of the Union is about 470,000 square miles, with an estimated population of about 6,000,000, of which about 1,300,000 are whites.

The following memorandum on the Disposal and Acquirement of Land in the Union of South Africa has recently been issued by the Government :

The passing of the Land Settlement Act during the 1912 session of the Union Parliament brought about uniformity of practice in the various Provinces as regards the acquirement and disposal of land suitable for settlement purposes. Briefly, the mode of procedure is as follows: Crown lands and alienated lands that have since been reacquired by the Government, suitable for farming purposes, are cut up into holdings of useful size (which varies, of course, with the district, proximity to a railway line, climatic and soil conditions, etc.), and advertised for

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the application being granted, he is prepared to contribute forthwith not less than one-fifth of the purchase price of the land, and to comply with the provisions of the Act. At the same time he should forward an option of purchase over the land, granted by the registered owner thereof, for a period of at least six weeks, but preferably for a longer period. The option, which should be in favour of the Minister, should correctly describe the land, state the lowest price at which it can be bought, and carry full rights. Applicants should also furnish detailed particulars of their capital (cash, stock, farming implements, etc.) on the prescribed form, which may be obtained from the magistrates of the various districts, or direct from the Department of Lands, Pretoria.

All applications should be sent to the Secretary for Lands, Pretoria, to be submitted for the consideration of the Land Board appointed for the area in which the land is situate. No assurance is, of course, given that any proposal submitted will be entertained by the Minister, nor does the Government refund any expenditure incurred by the applicant in connection with the application. Each proposal is dealt with entirely on its merits, and decided accordingly. It might, however, be mentioned that in cases where an agreement of purchase has already been entered into by the applicant, such will not be considered, nor will applications from farmers for the Minister to take over their farms from bondholders, and sell such farms back again to them in terms of the Act be entertained. The purpose of the Act is to settle persons on the land who do not already own land, but who possess a certain amount of capital, and are able to purchase a farm with the assistance of the Government, and personally occupy it in accordance with the provisions of the Act.

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“Oversea” Applications.—Section 17 of the Act also empowers the Minister, by notice in the Gazette and in one or more oversea newspapers, to offer holdings for allotment to applicants from oversea. Applications for allotment of holdings under this section shall be lodged with the High Commissioner for the Union, who is empowered in respect of all holdings to be allotted under this section, to exercise the functions conferred upon the Land Boards. This clause has not yet been put in force.

The following remarks upon the various Provinces of the Union are based upon the latest obtainable information. It should, however, be remembered that conditions are constantly changing, and intending settlers should not fail to apply to the official and semi-official sources of information. Disinterested and sound advice will always be supplied by the Mushroom Valley Agricultural Training Association, Limited, 175, Piccadilly, London, W., the secretary of which, Mr. H. Handcock, has wide experience of South African matters, and also occupies the secretaryship of the Settlers' Emigration Society; and by Mr. Cochrane, London representative of the South African National Union, Moorgate Station Buildings, London, E.C., who also possesses a wide knowledge of South African land conditions.

The Emigrants' Information Office is ever active in procuring the latest information, and issuing warnings, when such a course is necessary, to intending settlers, and its latest publications should always be consulted.

Generally speaking there is no particular inducement for professional men to emigrate to South Africa. The supply of candidates for such posts as become vacant is almost always in excess of the demand, and the competition in the

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big centres of industry is very keen. On the other hand, there are good openings for farmers with capital, but these should always acquire some local experience before setting up on their own account.

CAPE PROVINCE.—The climate is healthy, and well suited to the European constitution. The summer heat is greater and drier than in England. The interior of the Colony is liable to drought, but the south coast country has abundant intermittent rain. Some of the drier parts of the Colony, such as the Karoo, are very beneficial to persons suffering from chest complaints. The chief pastoral pursuit is the breeding of horses, cattle, ostriches, goats, and sheep.

A capital of £500, in addition to the cost of the land, is necessary. Dairy farming is profitably pursued, but is liable to the misfortunes occasioned by drought, which also influences the success or otherwise of sheep farming. Ostrich farming is very profitable, but requires exceptionally special experience and skill.

Poultry farming as a separate occupation does not pay.

Coloured labour is largely employed on the farms. Owing to the higher wages offered to the men on the railways and at the gold and diamond fields, farmers find a difficulty in procuring hands, especially during the lambing, shearing, harvesting, and vintage seasons. A Kaffir's wages vary from 10s. to 20s. a month, with food and a hut. Wages have generally risen since the war. Settlers are urged to spend some time on a farm to learn Colonial ways before investing in land, and they will find a knowledge of the Cape Dutch language most useful. It is easily acquired on the spot.

Young men wishing to learn farming under Colonial farmers should apply to the Secretary of Agriculture,

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Pretoria. Their names will be forwarded to such farmers as are prepared to take them for a year for board and lodging. There is some opening for young men with experience of farming to commence upon what is known as the "halves" system, by which the owner of the land provides the necessary land, implements and stock, and receives a half-share of all sales of produce, etc.

There are Government Colleges in the various Provinces, but Colonial-born men have preference in entering.

There is not much opening for more architects, engineers, surveyors, or other professional men, unless they have posts to go to, or have sufficient money (say, £200) to live on for a few months, while looking for employment.

Engineers will find that scarcely any machinery is made in the country, and that the engineering establishments are as a rule only repairing shops.

The supply of qualified teachers in Government Schools is, in some districts, short of the demand. Certificated teachers desirous of employment should apply to the Superintendent-General of Education. For the Regulations as to admission into the Police, etc., see the Professional Handbook of the Emigrants' Information Office, referred to at the beginning of this chapter, and the note at the end of the chapter.

Fares to Cape Town—Second class, £22 10s. to £30 9s. ; third class, £9 9s. to £24 3s.

NATAL PROVINCE.—The climate is healthy. On the coast it is subtropical; in the interior it is more temperate owing to the rise in the land. Farmers will do well to obtain local experience and some knowledge of the country and its products, before investing money in land.

The principal products of the Province are sheep, cattle

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sugar, tea, fruit, maize, wattle-bark, and coal. The manufacturing factories are few. Tanneries, breweries, and canning works are established in different parts, but the largest and most numerous of the manufacturing establishments are the sugar-mills.

The land may be divided roughly into three districts as follows:

1. The "coast" lands. Here conditions are favourable for vegetable and fruit-growing, or dairy farming. Agricultural or dairying land can be bought from £3 to £8 an acre; good fruit land, however, near Durban, costs £30 to £40 an acre.

2. Next to the "coast lands" there is a narrow belt of country which as yet has been used only for cattle farming and grazing, but then comes a wide stretch of country termed the "midland districts," with rich soil, where all kinds of European cereals and root crops can be grown and stock raised. The price of land in this district varies from 20s. to £5 an acre, in accordance with its distance from a railway. For a small agricultural farm at least £150 capital is required, and for a stock farmer holding 2,000 to 3,000 acres, about £1,500, exclusive of price of land.

3. The "upper" districts are chiefly devoted to sheep-farming and cattle-rearing, but the crops of wheat grown near Dundee, Weinen, etc., are the best in Natal. Wattle-bark for tanning is also extensively exported.

The usual farm is from 1,500 to 3,000 acres, and combines stock and agriculture. Land ten to twenty miles from a railway would cost twenty shillings to thirty shillings an acre, and the requisite stock from £1,000 to £1,200. The land is all open grass and requires no clearing.

Crown lands situated on the slopes of the Drakensberg and elsewhere, which are unsuitable for agricultural purposes, may be leased, at public auction, for grazing purposes only, for terms not exceeding five years and in areas not exceeding five thousand acres; the upset annual rental is 1d. an acre.

English farmers with capital who go to Natal will find a fair soil, a fine, healthy climate, pleasant society, and land at a reasonable price. They should work for wages on their first arrival, as some knowledge of the country before investing money in land is essential to success.

Fares from England to Durban—Third class, £12 12s. to £21; second class, £17 17s. to £34 13s.

TRANSVAAL PROVINCE.—Engineers, Architects, and other professional men should not emigrate to the Transvaal without a definite prospect of work. The struggle for life at Johannesburg and at the mines is as keen as anywhere in the world.

In Johannesburg the cost of living is from two to three times as much as it is in England. The average rent of a working-man's house, containing four or five rooms, is £6 a month, and the rate for board and lodging in most boarding houses is £7 a month, and in better-class houses £10 to £12.

There are openings in the Transvaal for the right sort of men as farmers and agriculturists, and markets are good. But there are also grave drawbacks to be contended with—such as lack of water in many places, liability to hail storms, to early and late frosts, to attacks of locusts, and the prevalence and virulence of certain insect and fungoid diseases. It is essential that a man should have some farming experience in South Africa, or should accept

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employment for a year or two with an experienced farmer in the Colony before sinking his capital on a farm of his own. In the Transvaal and the Orange Free State there are a number of selected British farmers who are prepared to take agricultural pupils, and to offer them the means of learning Colonial farming together with a pleasant home life. In each case these farmers are men of good position, whose methods of farming have been inspected and approved by the Mushroom Valley Association. In these cases a payment of £60 or £70 per annum (to cover the cost of living and instruction) would be required. The Mushroom Valley Association will be pleased to supply a list of such farmers.

Cereal farming itself is not often profitable: it should be combined with stock-keeping and transport riding. The average mixed farms should not be less than a thousand acres, but most farms are much larger. Farm labourers are almost all natives; they are paid as high as £2 or £3 a month, with board and lodging. It is important that a settler should have substantial capital, and one of £4,000 to £6,000 is necessary for an experienced farmer to establish himself on the High Veldt.

There is a School of Agriculture at the Government Experimental Farm at Potchefstroom; candidates, who must be resident in South Africa, must apply to the General Manager, and must be over sixteen years of age. Inclusive fees are £50 a year, the teaching is chiefly practical, and pupils remain for two years.

Fares from Cape Town to Johannesburg—Second class, £6 14s.; from Durban, £2 9s. 9d.

ORANGE FREE STATE PROVINCE.—The Mushroom Valley Agricultural Training Association has a

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farm near Winburgh, fully equipped with all necessary requirements for giving students a thorough knowledge (under expert instruction) of Colonial farming, and where they will be under the personal supervision of the Manager during their period of training. This Mushroom Valley Association (of which Lord Lovat is the Chairman) is not a financial undertaking or profit-making concern. It has been formed solely in the interest of promoting land settlement in South Africa, and to afford desirable settlers an opportunity of learning Colonial farming before they invest their money and decide to settle in a new country.

The Directors are prepared to take four or five selected settlers for a period of twelve months, and to provide the students with free food and quarters. The students will have to pay their passages out to South Africa, and their railway fares from the port to their destination (second-class boat and rail will not exceed £30).

As an earnest of the student's intention to settle in the Colony it will be necessary for him to give some security that he has a capital of £300, or he can deposit this amount in some South African Bank in the joint names of himself and the Association, the money not to be withdrawn during the year of training without the consent of the Association. The student will also have to enter into an agreement, copy of which will be supplied on application.

If, after the year of training, the student desires to remain on the farm, he can do so for a further period of twelve months on payment of £5 per month, the cost of his food.

Private land used for agriculture costs about 30s. to 75s. per morgen (two acres); for dairying, 10s. to 50s.; for stock-keeping, 10s. to 35s.; and unimproved land, 5s.

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to 7s. 6d. 1,200 to 1,400 acres of agricultural land, or 3,000 to 4,000 acres of good grazing land are required. On an agricultural farm of the above size three or four spans of trek oxen are necessary (a span consists of fourteen oxen), which would cost £10 apiece. A span of twelve mules would cost £20 apiece. On stock-farms two spans would be enough. The average price of horses is £25; of cows, £14; oxen, £11; and ewes, 25s. A start could be made with twenty to forty breeding cattle. A new waggon costs £80 to £120; a cart, £20 to £40; and a double-furrow plough £9 to £15.

A knowledge of Dutch and of Kaffir is almost essential. The South African Handbook of the Emigrants' Information Office gives a list of suitable books for the study of these two languages.

Fare from Cape Town to Bloemfontein—Second class, £5 6s. 8d.

The cost of living at Bloemfontein is very high. A good house of four rooms can be rented at from £5 to £7 10s. a month, and board and lodging costs from £6 to £7 10s. per month upwards.

For regulations as to permits, see the section on the Transvaal.

Immigration Regulations.—Intending emigrants to South Africa should acquaint themselves with these by applying to the office of the High Commissioner for the Union of South Africa, 32, Victoria Street, London, S.W. A Government memorandum on the subject, embodying information regarding the Immigrants Regulation Act, 1913, has recently been issued.

SWAZILAND.—The Mushroom Land Settlement, which is administered by the same Board as the Mushroom

Valley Association, owns large tracts of land in Swaziland which are now being laid out for agricultural settlement. The land can be leased or purchased on easy terms, the purchase money being spread over a number of years. Swaziland is not in the South African Union, but is governed by the Colonial Office under the immediate supervision of an Administrator resident at Mbabane, the capital of the Protectorate. Every assistance and advice will be afforded to intending settlers by the Resident Administrator. The climate is very healthy, especially in the high lands, with a rainfall of about 44 inches in the year, fairly well distributed, resulting in an equable temperature. The country is well suited for cattle-ranching, horses and cattle doing well in the high lands; while winter oats, mealies, fruits, trees, and all kinds of grasses thrive in the deep alluvial valleys. At present the great drawback is the lack of railway communication. The nearest railway-station is about seventy miles from the Swaziland border. The roads, however, are good, and a line of railway has been surveyed which, when completed, will link up Swaziland with Johannesburg and Delagoa Bay.

. **RHODESIA.**—Rhodesia is divided into two provinces—Southern Rhodesia, chief towns Salisbury, which is the seat of Government, and Bulawayo; Northern Rhodesia, with its administrative centre at Livingstone. Rhodesia has a rapidly-growing white population; but as yet only in the southern part is there an appreciable proportion of Europeans.

Railways now connect Salisbury and Bulawayo with Beira in the east and the towns of the south. The railway from Bulawayo to the north has reached the Congo borders of Northern Rhodesia.

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Naturally a country of such large extent (440,000 square miles) has a variety of climates, yet as most of it is a considerable height above the sea and within the tropics, there are no extremes of heat and cold. There are two seasons—the wet and the dry. The rains begin about the end of October and continue, with intermissions, till the end of April; from the beginning of May till the end of September there is practically no rain. The best time to arrive is during the dry season. The rainfall is greater in Mashonaland than in Matabeleland. As in so many new countries, malarial fever is prevalent in the valleys and low-lying districts, but can be avoided by adopting simple precautions to avoid the fever-bearing mosquito.

On the whole the climate of Rhodesia is delightful, for though it lies within the tropics its altitude ranges from 3,500 to 5,000 feet.

The learned professions are all well represented in Southern Rhodesia; but as the population increases there are likely to be further openings. There is an opening for qualified Land Surveyors. The British South Africa Police offers a healthy and attractive career. For Regulations as to admission, etc., apply to the Secretary of the British South Africa Company in London.

Gold-mining is the principal industry of the country, and on the success of this its immediate future depends. The output in 1913 was of a total value of £2,903,267.

Land in Rhodesia is acquired from the British South Africa Company or held under agreement, subject to occupation and other conditions, with a system of purchase by instalments. At present the price of unimproved farms is from about 7s. an acre.

Applications for land up to 50,000 acres should be addressed to the Director of Land Settlement, Salisbury,

Rhodesia; for larger areas to the Secretary, Land Settlement Department, 2, London Wall Buildings, London, E.C.

The greater part of the country is suitable for cattle, and the grass is generally good.

Parts, especially in Mashonaland, are well suited for agriculture. Indian corn, millet, tobacco, and potatoes can be grown without irrigation. Wheat and oats promise well where water can be led, and experiments have been made in cotton-growing. Oranges mature in June and July, and fetch good prices on the London market. As farming is, in a great measure, in an experimental stage, no one is recommended to attempt it without a capital of, say, £1,000, and then only after acquiring by residence experience of the special conditions of the country. Approved pupil settlers are admitted to the home farms of the British South Africa Company.

The address of the British South Africa Company is 2, London Wall Buildings, London, E.C.

XXII

POLICE FORCES OF THE EMPIRE

THE following brief summary of the necessary qualifications for the various Police Forces of the Empire (with payment and prospects) may be found useful :

1. **ROYAL IRISH CONSTABULARY.**—Competitive Examination in Dublin. Limited to candidates nominated by the Chief Secretary to the Lord Lieutenant of Ireland.

Qualifications.—Unmarried, at least 5 feet 8 inches, able to pass medical examination with strict sight test. Age between twenty-one and twenty-six years, with extension to twenty-eight in the case of officers of Army or Navy. Sons of Officers of the Force admitted at nineteen.

Subjects of Examination include Arithmetic, Digest of Returns, English Composition, Précis, Geography, History, Latin or French, and the elementary principles of Law.

Pay.—Commencing salary as Cadet £75 8s., District Inspectors £125 to £550.

2. **INDIAN AND COLONIAL POLICE** (Hong Kong, Straits Settlements, and Malay States).—Open competition. Examinations once a year, held at the same time as that for admission to Sandhurst, the papers being identical.

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A candidate must be unmarried, between nineteen and twenty-one years, British subject of European descent, and his father a British subject at the time of his birth, able to ride, and they must pass a very strict medical examination.

Pay.—Indian Police, Probationers £20 a month, Assistant Superintendents £20 to £33 a month, higher posts about £47 to £200 a month. Ceylon Police, £350 to £700, and one post of £1,050 to £1,200 a year. Hong Kong, only three posts commencing at £360, £600, and £800 a year respectively. Straits Settlements and Malay States, commencing salary—Assistants £360, Superintendents £720 a year. One Inspector-General at higher salary.

Full particulars concerning the Indian Police Service will be found in the chapter on the Civil Service.

3. SOUTH AFRICAN POLICE.—The forces formerly known as the Cape Mounted Rifles, Cape Mounted Police, and Natal Mounted Police, have now been merged in the Union Defence Force. Their functions have now largely devolved upon the South African Police Force, which contains a fair sprinkling of members of the original corps. As regards pay and prospects, the South African Police ranks with the other Services dealt with in this section. It should be noted, however, that enlistment can only be effected in South Africa. The High Commissioner for the Union in London could be consulted as to rates of pay, etc., but he has no official connection with the force, and does not deal with applicants as such.

4. BRITISH SOUTH AFRICA (RHODESIAN) POLICE.
—This Force differs from the Cape and Natal Police in

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being under the control of the Imperial Government. The regulations as regards entry and pay are very similar to those for the other South African Police Forces, but lucrative administrative civil posts are open to members of the Rhodesian Force, and the prospects are better all round. Age, twenty to twenty-five.

5. WEST INDIAN CONSTABULARY.—These include the Constabulary of British Guiana, Trinidad, and Jamaica, and are native forces officered by white men. Age, twenty-one to twenty-six. Candidates must be unmarried, at least 5 feet 8 inches, with good physique in proportion, and nominated by the Secretary of State for the Colonies. The examination is a qualifying one except when there are more applicants than vacancies. Subjects similar to those for the Royal Irish Constabulary.

Pay.—Commence at £130 in Jamaica, £168 15s. in British Guiana, and £200 in Trinidad. There are, in addition, liberal allowances, and adequate leave and pension arrangements.

6. POLICE IN BRITISH EAST AND WEST AFRICA.—These include the Gold Coast Civil Police, Northern Nigeria Police, and Southern Nigeria Civil Police, all in West Africa; and the East Africa Protectorate Police and Uganda Police in East Africa. These forces are all native, but are officered by white men. In West Africa the minimum age is twenty-three, in East Africa, twenty-two years. Preference is given to unmarried candidates under thirty-five years. There is no examination beyond a medical one. All applications must be addressed to the Secretary of State for the Colonies. Pay in the East African Colonies starts at £150, and in West Africa at £300. There are liberal allowances in both cases.

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7. NORTH-WEST FRONTIER (CANADA) POLICE.—This force is not recruited for in England. Those wishing to join must proceed to Canada and apply at Headquarters there, but vacancies are mainly filled by Canadian-born applicants.

XXIII

ADDENDA QUÆDAM

I. PRIVATE SECRETARIES

WHEN we think of the post of Private Secretary, we must recognize that it is filled by two quite different types of men. We have the first type, who is a sort of superior Clerk; and we have the second type, who in training and traditions, but not in means, is on an equality with his employer. The former type will be the man who has received a good ordinary education, has perhaps passed some time at one of the Commercial Schools, is skilful at figures, shorthand, and typewriting, and is a very useful and trustworthy person. Now and again, a man of this kind, by his sterling qualities, will raise himself to a position of real influence and importance, but he will be the exception. For a post of this lower kind a youth will remain at school until he is sixteen or seventeen, specializing during his last year or two in commercial subjects and modern languages, and then seek an opening with a firm at a commencing weekly salary as Clerk of anything from 10s. to 20s. He will work his way up, and when he has gained the confidence of the firm and has acquired experience, he may hope to become a Confidential Secretary: he will receive from £150 to £200 per annum, and may rise to £500 or £600.

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The other type of Private Secretary will be the old Public School boy, the University man, and the First Class Home Civil Service candidate. He, too, will have the sound general education, but he will also have the wider outlook which culture may be reasonably expected to bestow. His help is needed by the large landowner, the captain of industry, the prominent politician, and it will often be needed in circumstances that require delicate tact and judgment. The relationship between him and his employer is often intimate, and demands as a prerequisite the instincts of a gentleman. These posts go almost entirely by direct personal recommendation, and we should not expect it to be otherwise. The Headmaster or the House Master of the Public School may be of assistance, or the College Don, or some other influential friend, who will take the trouble to speak the word in season. The initial salary will be a round £200 per annum, and may be £300, and will increase to £1,000 or more. We know of a case of an Oxford man some years ago who became Private Secretary to a Member of Parliament at £200 a year; he happened to help him at his election, and attracted notice by his effective speeches. He was invited to contest another constituency, was elected, and himself became a prominent politician requiring a Private Secretary of his own.

Men who have got into the First Class Home Civil Service occasionally have the opportunity, later on, of being appointed Private Secretary to a Minister of a Government Department; they receive an increase in salary, and they enjoy the responsibility of interesting and important work.

To sum up, the higher type of Private Secretaryship is a post hard to get, and very desirable. The work is

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interesting, and the prospects are good. The qualities required are exacting—good-breeding, culture, tact, diligence, trustworthiness, the discretion that can keep wise silence, and the resource that can cut through difficulties.

It may be useful to draw attention to the Chartered Institute of Secretaries, 59A, London Wall, London, E.C., which takes oversight of the Secretarial profession as connected with Joint Stock Companies and other public bodies. The examinations of the Institute are—(1) The Preliminary, in subjects of general education; (2) the Intermediate, or Associates' Examination, in professional subjects; (3) the Final, or Fellows' Examination, in professional subjects. Prospective members are admitted to the examinations prior to the completion of the requisite period of service in the office of a public company or body. Further information may be obtained from the Secretary, C. H. Carpenter, Esq.

II. BUSINESS FOR PUBLIC SCHOOL AND UNIVERSITY MEN

Not many years ago a thick line of demarcation was drawn between the professions and business. The line to-day is very thin, and it will soon disappear. Public School boys and University men are being drawn in larger and larger numbers every year to business, and this surely is well. Business is worthy of their keenest attention; it needs them, and it offers them the "adventure" of great opportunities. There is a demand urged by some business men, whose opinion must carry weight, that the curriculum of our Public Schools and older Universities should be

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better adjusted to the utilitarian requirements of practical business. Others again, whose opinion is of equal weight, plead that it is just the wider outlook of the present curriculum that gives their value to the Public School and University men, in business. These conflicting opinions will doubtless be reconciled in the gradual development of events; the old culture, we trust, will not be displaced, but opportunity may be found to recognize in a wise and conservative spirit the demands of the more utilitarian enthusiast.

A question that faces the parent at the start is whether a business career should come immediately after the Public School, or after the further advantage of a course at the University. We do not believe that a general principle can be safely laid down: each particular case ought to be separately considered. There are advantages either way. To go straight into business from the Public School means the saving of valuable time at an important juncture. The three or four years from nineteen onwards are tremendously important for grasping the technique of business, and a youth runs no risk of being "switched off" from practical affairs by the glamour of the University. On the other hand, the University career affords advantages that are absolutely unique. A man has his corners knocked off, he begins to think, he makes friends, he gradually acquires the larger outlook of the well-equipped man, and when he enters business, he starts on a higher level. Mr. Sidney Ball, Fellow and Senior Tutor of St. John's College, Oxford, in a recent article communicated to the Press, pointed out that, while the Oxford curriculum did not aim at giving anything of a technical training, but was formal or general rather than vocational or specific, it was just for that reason that it was found useful for business. And

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the same truth will apply, to a large degree, to Cambridge.

PROSPECTS.—We are led to understand that there is a distinct opening for Public School and University men in the big commercial firms at home and abroad. We were recently informed that it is men of this type that hold the executive posts as heads of departments in one of the most successful establishments in London. However, one word of warning must be given: no assumption of superiority will be tolerated in business; a man there is measured by his work. We are of opinion that the training of the Public School and University supplies an asset of real value which can stand on its own merit, and linked with vigour, geniality, and tact, it will carry a man to success.

HOW TO PROCEED—(a) *The Public School.*—A youth should follow the curriculum of his school until seventeen or eighteen, and then endeavour during the last year or two of his stay at school to pay special attention to straightforward Mathematics and Modern Languages. His Headmaster will probably refuse to sanction—and he will be right in doing so—any serious derangement of work; but he will as probably consent to a little readjustment, which will give the opportunity needed. In the meantime the parent should be casting about for an opening in a good business firm; and here the personal influence of friends becomes of great importance, so that an introduction may be obtained to a Director or Managing Official. An interview will follow, when the youth's suitability will be gauged. If he is accepted, he will at first only receive a small stipend, and he will be expected to learn the technique of the business from the bottom. High-class

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commercial firms do not accept any premium; but as a youth, while he is learning his initial lessons, is of little value to them, his remuneration during this period will usually be quite small. Then, after, say, a couple of years, his progress will depend upon himself. If he develops the qualities of which the foundations are laid in the Public School, he will begin to forge ahead.

Quite recently we heard of a youth of nineteen in one of our oldest Public Schools being thus accepted by one of the largest commercial firms in the kingdom. In this case a stipend was given from the first which was enough for maintenance. Further, we were informed by the Managing Director, a man of vast experience and world-wide commercial interests, that the firm had plenty of room for such youths, if they were built of the right stuff.

(b) *The University*.—The University of London and the Universities of the large provincial cities—Liverpool, Manchester, Birmingham, and others—deliberately set themselves to meet the demands of the modern spirit. They offer their great advantages; but in the present connection it is Oxford and Cambridge that we have in mind. At Oxford a large number of men are turning their attention to business. Congenial openings are being found in increasing numbers in Publishing, Industrial, and Engineering firms. Roughly speaking, we may say that a man will start at £150 to £200 for his first year or two, and then afterwards he will be paid according to his work. Information is often of a private character, and application should be made, when a man is in his last year, to the Secretary, Oxford University Appointments Committee, Old Clarendon Building, Broad Street.

At Cambridge a still larger number of men seek openings in business, especially in the direction of Engineering.

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The high repute of the Mathematical and Mechanical Sciences Tripos enables men to obtain *uno saltu* satisfactory openings in many commercial and engineering firms. Salaries generally start at the figure named above in the case of Oxford; but application should be made to H. A. Roberts, Esq., Secretary, Cambridge University Appointments Board, 61, St. Andrew's Street.

In connection with this subject, and in view of the importance of a good knowledge of modern languages (French, German, and Spanish), parents may find it useful to know of the British-German Foundation.

In accordance with a resolution passed at the joint meeting of the German and English sections of the King Edward VII. British-German Foundation (instituted by Sir Ernest Cassel), the German Foundation will again, in the year 1914-15, employ part of its income in providing studentships to enable University graduates of British nationality to reside in Germany with the object of studying some branch of science or literature, or becoming acquainted with the commercial or industrial life of the country.

It is intended that the students should familiarize themselves with the better sides of German social life, and for that purpose assistance will be given in the selection of suitable families with whom they may reside. Facilities will also be given them for attending University lectures, and for obtaining introductions to the heads of large manufacturing works or commercial houses. The selection of the candidates was left to the British Council, who appointed for this purpose a committee consisting of Mr. Geoffrey Drage (chairman), Sir Henry Babington Smith, and Dr. Ernest J. Schuster, with two co-opted members—Dr. Shipley, Master of Christ's College, Cambridge,

ADDENDA QUÆDAM

and Mr. P. E. Matheson, Fellow of New College, Oxford.

The committee have awarded studentships of 3,500 marks (about £175) to six candidates, and studentships of 2,000 marks (about £100) to two candidates.

Further information may be obtained from the Secretary, King Edward VII. British-German Foundation, Denison House, Vauxhall Bridge Road, London, S.W.

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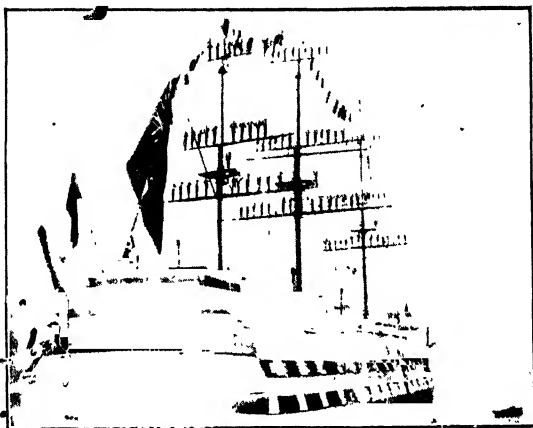
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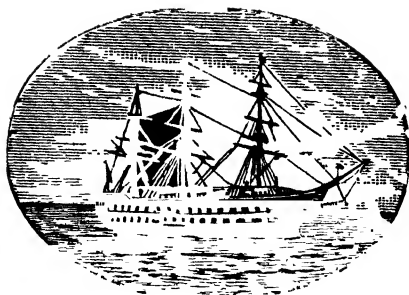
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